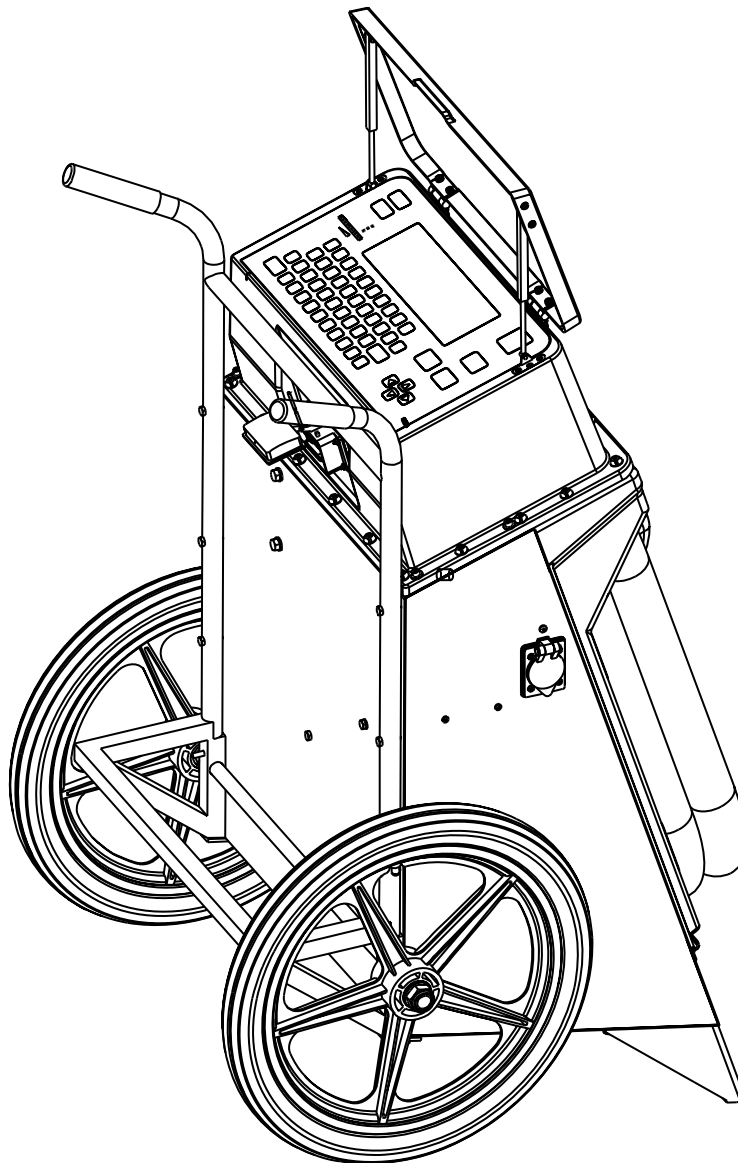


# **AUTOMATED SINGLE CAR TEST DEVICE USER'S & SET-UP MANUAL**



October, 2005

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## ASCTD User's & Set-up Manual

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### GENERAL INFORMATION

The function of this manual is to describe appropriate procedures for setting-up, and operation of, the Wabtec Corporation Automated Single Car Test Device.

**IMPORTANT:** The operator must observe all AAR requirements for air brake testing. For this reason copies of all applicable AAR standards should be readily available to the operator at the time of testing.

It is the responsibility of those receiving these instructions to ensure they are followed scrupulously during the operation of the Automated Single Car Test Device (ASCTD). The individuals receiving these instructions are also responsible for properly informing other designated operators the intended purpose of this test device. This test device is designed to automatically test the operation of the air brake system on freight cars.

### 1.0 INTRODUCTION

Throughout this document the following will be referred to:

- "SSPB" will refer to "Single Sided Pipe Bracket"
- "ASCTD" will be refer to "Automated Single Car Test Device"
- "EOC" will refer to "End of Car"
- "Car" will refer to one complete set of air brake equipment, consisting of one control valve and all associated auxiliary valves, reservoirs, brake cylinder(s), and brake pipe.

The Automated Single Car Test Device is designed to perform freight car air brake tests in accordance with AAR Standard S-486 (latest revision). With minimal input by the operator, it will perform a more accurate and efficient test than the Manual Single Car Test Device, and provide a record of the test procedure and results. The ASCTD will also provide on screen diagnostics for single car test failures.

The ASCTD is a microprocessor controlled, air piloted test apparatus for testing the operation of current standard freight car air brake systems. The ASCTD will perform a single car test two different ways.

#### 1. Access plate/receiver option

Air is supplied and exhausted directly to brake pipe, auxiliary reservoir, emergency reservoir, and brake cylinder volumes. Access to these pressures is provided by four hoses bundled together and an interface connector mating with a receiver located on the car. The receiver is mounted directly to the pipe bracket or to an access plate located between the standard AB pipe bracket and service portion. The interface connector uses a manually operated securing mechanism for attachment to the receiver. The interface connector will open and close check valves in the receiver to create a pneumatic path between the car and the test device. The test device monitors pressure in each of the four lines described earlier.

#### 2. EOC (End of Car) test connector

Air is supplied directly through the glad hand to brake pipe and to brake cylinder through the brake cylinder access hose. This operation performs the single car test in a conventional manner.

All tests performed by the Manual Single Car Test Device (as per S-486) are performed by the ASCTD, but not always in the same order. The ASCTD uses pressure transducers in the brake cylinder, auxiliary and emergency reservoirs, and brake pipe. It can also detect problems not recognized by the Manual Single Car Test Device. The test results are recorded for displaying, printing or downloading to a computer, and can be viewed, sorted and printed using an external database program.

This manual is designed for use with any Wabtec Corporation ASCTD in service. Screens shown in this booklet may differ slightly from the screens on the test device you are operating. This booklet was designed from screens shown on the Generation II test device. If the test device being used is not a Generation II, please follow the screen directions.

All test devices were designed to perform proper air tests as laid out by the Association of American Railroads (AAR) and will direct the operator through the correct operation. There is a Troubleshooting Guide at the back of this manual for the operator's use.

The control panel contains a display screen, modified PC keyboard, On/Off buttons, Emergency button, Quit button, Yes/No buttons, up/down/left/right arrow buttons and battery status lights.

## 2.0 WARNINGS

**Air will be discharged at intervals throughout the test. To minimize any possible injury, personal eye and ear protection must be worn when performing any work with this test device.**

Supply air **MUST FIRST BE BLOWN OUT** and then coupled securely to ASCTD.

When charging or operating the test device while plugged in to a wall outlet, the outlet must be equipped with a ground fault interrupter (GFI).

When performing tests, all personnel must be clear of car body and under frame mechanisms.

When storing the ASCTD for an extended period of time (greater than one week) the battery must be turned off.

Disconnect supply air from the ASCTD when not in use.

**Test device must be calibrated every 365 days as per AAR S-486 par. 2.2 Pretest Instructions, contact a Wabtec Corporation Field Engineering Representative for Calibration Kit and procedures @ 412-825-1000.**

**NOTE:** The internal components of this unit are extremely sensitive. Only authorized personnel and qualified Wabtec Corporation technicians are allowed access.

## 3.0 SAFETY CONSIDERATIONS

### **Audible Warning**

The ASCTD is equipped with an audible warning to alert workers and bystanders of an impending brake action. After the warning sounds, any appropriate personnel should be verbally warned by the operator of an imminent brake action.

### **Emergency Drain Function**

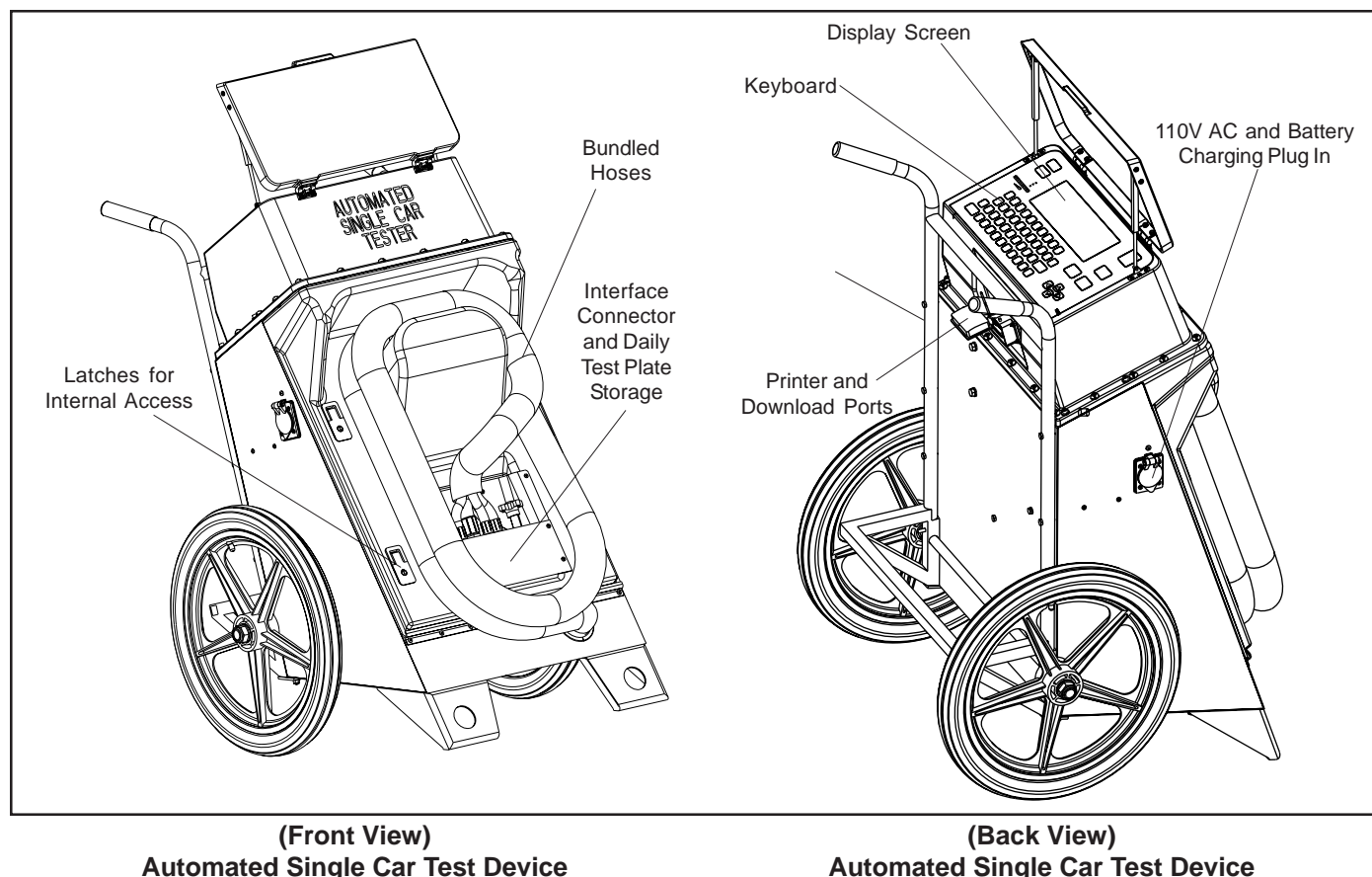
The ASCTD is equipped with an emergency drain function. The emergency drain button should be pressed when an unexpected dangerous event occurs.

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### 4.0 EQUIPMENT FEATURES

The Automated Single Car Test Device incorporates the following equipment features:

**NOTE:** Certain models of the test device may differ slightly from the figures shown. Please contact your Wabtec Corporation Representative for help or an explanation of any equipment not fully explained in this manual.



**Plug In for 110 Volt AC Power** - It is recommended the unit to be operated under AC Power. It will operate on battery power for short periods of time. The batteries will charge while the unit is being operated under AC power. (Unit will operate on battery power for approximately 8 hours).

**Air Supply Connection** - Due to the diverse type of air connections in each individual shop, Wabtec Corporation has not equipped the unit with any standard air supply coupling.

**Control Panel** - All operating functions are initiated through the control panel and keyboard. See layout of control panel on the following pages.

**Printer and Download Ports** - Used for connecting to computer and/or printer for access to test records.

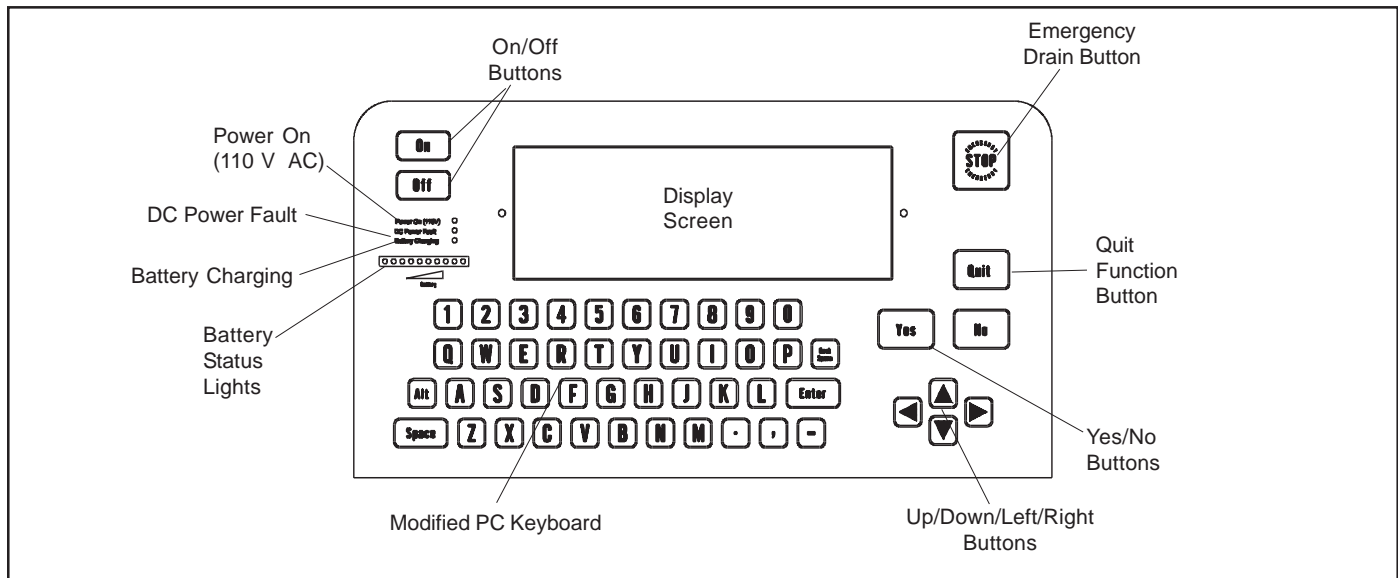
**Interface Connector and Bundled Hoses** - Access connection used to connect unit to freight car for testing procedures.

**Interface Connector Storage** - Storage of the interface connector is important to prevent damage and resulting leakage during the testing of individual cars. Daily test plate is also stored here.

**Latches for Internal Access** - Opens the front cover of the unit. Only authorized personnel are allowed access to the internal components of this unit.

**Manual Drain Valve** - Newer units may be equipped with this valve, located on the right side, at the bottom edge of the test device (front view).

### Layout of the Control Panel



**Display Screen** - Uses 6 lines with a maximum of 40 characters. The screen will provide directions and information for the user during the test procedures.

**Keyboard** - Layout of the keyboard is a modified version of a computer keyboard.

**On/Off Buttons** - Used for turning the unit "ON" and "OFF".

**Yes/No Buttons** - Used to respond to questions and prompts shown on the display screen.

**Up/Down/Left/Right Buttons** - Use of these buttons will move the cursor on the screen.

**Power On Indicator** - Indicates the device is turned on to battery power or plugged into 110 VAC.

**Ground Fault Interrupter** - To prevent electrical malfunction the unit must be connected to a ground fault circuit interrupter (GFI) outlet.

**DC Power Fault Light** - Indicates that the DC voltage is not within limits.

**Battery Charging Light** - Indicates the battery is being charged.

**Battery Status Lights** - Indicates the battery charge status. When the battery power gets low (amber lights), plug the unit into AC Power.



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**Emergency Drain Button** - The ASCTD is equipped with an emergency drain function. The emergency drain button should be pressed when an unexpected dangerous event occurs.

The emergency drain function is to be used only in emergency situations and is not intended as a quit function.

**Quit Function Button** - The ASCTD is equipped with a quit function. The quit function should be pressed when the testing needs to be stopped in a non-emergency situation.

### 5.0 REQUIREMENTS

**Electrical** - The test device is powered by a replaceable internal battery pack that is charged through a 110 VAC power outlet. The charging outlet is located on the right side of the test device when facing the screen.

For operation using AC power, the test device must be plugged into a ground fault circuit interrupter (GFI) outlet to preclude potential electrical shock.

**Battery Charging** - Battery life is approximately 8 hours within the operating temperature range of the device. The battery status can be monitored through a series of lights on the control panel.

When the battery voltage is very low (last red light), a fault error will be displayed and all power will be shut down within 2 minutes.

**NOTE:** If the battery power is drained and the 110 VAC power is needed, the operator can only continue by waiting at least 10 minutes before the ASCTD power is recharged. The batteries will continue to charge while the AC power is applied.

**Supply Pressure** - Wabtec Corporation recommends the test device be operated with a minimum continuous supply pressure of 110 psi and a maximum of 150 psi. The device is equipped with pressure relief protection capable of venting the device if the pressure exceeds 150 psi.

**Environmental** - The test device has an operating range of -13° F to +150° F (-25 ° C to +65° C). The test device may not operate solely on battery power below -4° F (-20° C).

### 6.0 EQUIPMENT FUNCTION - SUPERVISOR SETUP

#### PASSWORD ASSIGNMENT

Passwords are used to access information, retrieve old information and add new information to an existing database. The assignment of passwords is the responsibility of the person designated by the end user such as an air brake supervisor or foreman. During Wabtec Corporation training, a password will be assigned to the supervisor for access and entering passwords for the personnel (carmen/car mechanic) responsible for the actual testing.

The supervisor should have access to Levels 1, 2, 4, 5 and 6. These cover testing, the utilities menu and allow the supervisor to change passwords. The utilities menu allows access to change the time & date, passwords, and view or print results. The carmen should have access to only Level 1 - Testing.



**7.0 EQUIPMENT SET-UP**

If this unit has just arrived at your location, before performing any test procedure, visually inspect the unit to ensure there is no damage. Any damage to the unit which may effect the operation of the unit must be reported to the Wabtec Corporation Field Engineering Group in Wilmerding, PA (412)-825-1000.

**Upon receiving ASCTD from shipping, the battery switch must be toggled to the "ON" position. The unit will not function properly if switch is not in the "ON" position.**

**NOTE:** Do not plug in AC power until the battery switch has been toggled "ON".

To access the switch, open front hose hanger cover using the latches for internal access (Figure 2) and locate aluminum box with a large yellow cable plugged into it. Place the toggle switch to "ON" and close the front cover of the test device. Switch must be turned "OFF" for shipping purposes. Unit should be left on charge overnight before using for the first time.

When using this booklet for testing using the ASCTD, the operator will note the following:

- This booklet was designed using Generation II ASCTD screen information.
- Screens or possible screens are shown in bold print.
- Not all screens shown in this booklet may be the same as the machine you are operating.

**Set-Up**

1. After the battery switch has been turned "ON", plug in the unit to an electrical outlet to start the batteries charging and to perform the initial tests on the unit.
2. Connect to a source of clean dry air. (See Supply Pressure). Attach a flexible air hose to the air inlet of the test device and the other end to the air supply. See IMPORTANT below.

**IMPORTANT:** This unit and the control valves are very sensitive to condensation, moisture and debris supply air must be blown out of the air hose before connecting to the ASCTD.

3. Turn the unit "ON". It will sequence through several screens and perform a self analysis. Eventually a screen will appear similar to the one shown below, requiring input from the operator.

**IS DATE AND TIME CORRECT?**

DAY      MONTH      TIME      YEAR  
PRESS YES: OK    NO: CHANGE  
1 ENGLISH    2 ESPANOL    3 FRANCAIS  
S=\_\_\_    BP=\_\_\_    A=\_\_\_    E=\_\_\_    BC=\_\_\_

Correct time and date must be shown on this screen. If it is incorrect press "NO" and test device will direct the operator through screens to make necessary corrections. At this time language preferences can be made by select 1, 2 or 3. If correct press "YES" to continue. The following screen will appear.

**MAIN MENU**      **hh:mm:ss**  
1 - SGL. CAR TEST      4 - DAILY TEST  
2 - RESERVED      5 - UTILITIES  
3 - SPECIAL TESTS      6 - VENT SYSTEM  
S=\_\_\_    BP=\_\_\_    A=\_\_\_    E=\_\_\_    BC=\_\_\_





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The test device will show air pressure values on the bottom of the screen. These values will change as the air pressure usage changes.

**S** = the amount of supply pressure to the test device.

**BP** = Brake Pipe Pressure

**A** = Auxiliary Reservoir Pressure

**E** = Emergency Reservoir Pressure

**BC** = Brake Cylinder Pressure (upstream)

To access the Utilities Menu, press key number "5". At this point the unit will require the use of a password as shown on the following screen.

### UTILITIES MENU REQUIRES A PASSWORD

TYPE PASSWORD: \_\_\_\_\_

PRESS ENTER/YES: END BS: DEL

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

The password assigned to the supervisor during training must be typed in by the operator and press "ENTER" or "YES" to move to the next screen, "Back Space" to exit/delete.

### UTILITIES MENU

hh:mm:ss

1 - CALIBRATION

4 - RESULTS

2 - TIME & DATE

5 - PROGRAM

3 - PASSWORDS

6 - DISK

NO: EXIT

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### a. Accessing Passwords

Press "3" to access the Password function.

### CHANGE PASSWORD REQUIRES A PASSWORD

TYPE PASSWORD: \_\_\_\_\_

PRESS ENTER/YES: END BS: DEL

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

The password assigned to the supervisor during training will most likely be the same as above. The operator must type the desired characters and press "ENTER" or "YES".

### PASSWORDS 1-3: EDIT NO: EXIT !:PAGE1

1. WABCO 12456

2. \_\_\_\_\_

3. \_\_\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**NOTE:** The first password should NOT be edited or deleted. The password shown in line 2 will be the assigned password during training. Select the first blank line by pressing the appropriate number.

EDIT PASSWORD: \_\_\_\_\_  
 NEW PASSWORD: \_\_\_\_\_  
 PRESS ENTER/YES: END BS: DEL  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

The selected password will be shown on the top line of this screen. To change this password, enter the new password by key punching it in the line indicated and press "ENTER" or "YES".

1- 6: TOGGLE YES: END NO: DEL 0: PWD  
 1. TESTING 4. FILE UTILITIES  
 2. UTILITIES MENU 5. DOWNLOAD PROGRAM  
 3. RESERVED 6. CHANGE PASSWORD  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**NOTE:** The new password will be shown in the top left corner. Assign an authority level by entering the appropriate number. Most users only require level 1 for testing. Repeat until all passwords are entered. Supervisor will require levels 1, 2, 4, 5 and 6 (assigned during training).

#### **b. Time & Date Setup**

If necessary, the setting of the time and date is the responsibility of the person designated by the end user such as air brake supervisor or yard foreman.

From the Main Menu, select 5 - Utilities and press "5". The Utilities Menu will require a password as indicated next.

**UTILITIES MENU REQUIRES A PASSWORD**  
 TYPE PASSWORD: \_\_\_\_\_  
 PRESS ENTER: END BS: DEL  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

The password assigned to the supervisor during training will be used. The operator has to type the desired characters and then press "ENTER".

UTILITIES MENU hh:mm:ss  
 1 - CALIBRATION 4 - RESULTS  
 2 - TIME & DATE 5 - PROGRAM  
 3 - PASSWORDS 6 - DISK  
 NO: EXIT  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Press "2" to access the Time & Date function.

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**TIME & DATE FUNCTION**                      **hh:mm:ss**  
**CURRENT:**                      **Date**                      **Time**  
**1- SET TIME**                      **2- SET DATE**  
**NO: EXIT**  
**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

The unit will display a time and date, this information may be incorrect and changes are required. Press "1" to change the time and "2" to change the date. If the information displayed is correct, press "NO" to exit. If the operator selected the time to be changed, the following screen will be shown.

**TYPE TIME IN 24 HOUR FORMAT**   **hh:mm:ss**  
**CURRENT TIME:**   **\_\_:\_\_:\_\_**  
**PRESS <:DEL >:BLANK**  
**PRESS YES/ENTER: CONTINUE   NO: ABORT**  
**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Key in the correct time and press "YES" or "ENTER".

**NOTE: Time is set in Military format (24 hour clock).**

**TYPE DATE AS MM-DD-YYYY**  
**CURRENT DATE:**   **\_\_:\_\_:\_\_**  
**PRESS <:DEL                      >:BLANK**  
**PRESS YES/ENTER: CONTINUE   NO: ABORT**  
**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Key in the correct Month, Day and Year and press "YES" or "ENTER". Year must be entered in 4 digit format, it is not necessary to enter hyphens.

## **8.0 RESULTS – VIEWING, PRINTING, AND DOWNLOADING**

Single Car Test Results maybe viewed directly, sent directly to a printer or downloaded and transferred to a personal computer (PC).

### **PRINTER SETUP PROCEDURE**

The assignment of printing is the responsibility of the person designated by the end user such as air brake supervisor or yard foreman.

**NOTE:** This procedure must be followed in sequence to avoid serious damage to the test device.

The ASCTD will only function with **Printers that meet I EEE 1284 specifications** (check the printer's owner manual for compliance to I EEE 1284 specifications). An IEEE 1284 Bidirectional printer cable is required between the Printer and the ASCTD. The printer must also support WIN3.1 or MSDOS software.

#### **a. Set-Up**

1. Before any electrical power cords are plugged in, install the printer cable between the printer and the ASCTD.
2. Turn on the test device.
3. Wait for the main menu screen to appear on the ASCTD.
4. Turn on the printer. If the power light does not appear on the printer, turn off the printer immediately and repeat the procedure.

#### **b. Disconnecting the Printer.**

1. Turn off the power to the test device.
2. Turn off the power to the printer before disconnecting the printer cable. All power has to be off before the printer cable is disconnected.

### **ACCESSING RESULTS**

The results can be searched by the following criteria:

- operator
- certain date - before and after
- number of tests
- car number
- test type
- or any combination of the above

For viewing purposes or using the printer, after connecting the printer to the test device and with the unit turned on, the Main Menu will appear.

To obtain information, from the Main Menu select Utilities by pressing "5". Enter the password in the next screen as indicated earlier in this booklet. The unit will move to the next screen requiring a prompt from the operator.

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UTILITIES MENU                      hh:mm:ss  
 1 - CALIBRATION                    4 - RESULTS  
 2 - TIME & DATE                    5 - PROGRAM  
 3 - PASSWORDS                    6 - DISK  
 NO: EXIT  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Press "4" to access the Results function.

RESULTS  
 1- SELECT & DISPLAY RESULTS  
 2- TRANSFER RESULTS TO PC  
 NO:EXIT  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Press "1" to select and display results.

RESULT SORT 1- 6: TOGGLE            YES:GO NO:END  
 1. OPERATOR                            4. LAST n TEST  
 2. AFTER                                5. CAR NUMBER  
 3. BEFORE                              6. TEST TYPE  
 SS=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**NOTE:** Select the option or combination of options to sort test results. Once information is entered, the following screen will appear:

SEARCHING RESULTS  
 TOTAL RESULTS: xx  
 MATCHES FOUND: xx  
 PRESS NO: CHANGE YES: ACCEPT  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

To access the results press "YES" to continue. This will cause the test device to display the desired results.

RSLTS 1- 3:SHOW 0: PRINT NO:END <>: #1  
 1.  
 2.  
 3.  
 PRESS YES: SEARCH 4-6: PRINT 1, 2, 3  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**NOTE:** To print a summary of test results from this screen press "0".

Press number of test (1-3) to be viewed or printed. To advance to other pages of results press >.



"Test Type"      NO:EXIT      YES:PROCEED  
 CAR NUMBER:      TIME  
 CAR STAMP NUMBER:      DATE  
 CAR LOT NUMBER:  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Press "YES" to continue through selected result. Individual results can be printed from any screen that shows 0: PRT.

## VIEW RESULT SCREEN SUMMARY

### a. DUMMY CONNECT

#### ALL CONNECTED

Confirmation that the operator has attached the interface connector to the receiver and the supply pressure to the Automated Single Car Test Device.

#### ANGLE AND CUT-OUT COCKS OPEN

Confirmation that the operator has ensured that both angle cocks and branch pipe cut-out cocks are open.

#### AIR FLOW THROUGH HOSE

Confirmation that the operator felt air flow from both ends of the brake pipe. This will ensure continuity of the brake pipe. It also verifies the supply air is connected.

#### DUMMY CONNECTORS INSTALLED

Confirmation that the operator has installed the dummy couplings.

### b. CHARGE/RETAINER/LEAK/HAND BRAKE

AUX INCREASE 1-8      \_\_\_\_\_  
 EM INCREASED 0.3-5      \_\_\_\_\_

After the brake pipe is charged to 20 psi, the ASCTD will confirm that auxiliary and emergency reservoir pressures charge within limits. This is the charge test which ensures that the reservoirs charge properly through the control valve.

#### BC < 1.5

The ASCTD will confirm that brake cylinder does not increase during a preset time while charging. This checks for leakage to the retainer from the service or emergency portion.

#### BC DROP < 1.5

After the brake cylinder has charged to 16 psi and the retainer is in High Pressure position, the ASCTD will confirm the brake cylinder pressure does not drop during a preset time. This is the retainer test.

#### BC AFTER DROP >= 10

The ASCTD will confirm at least 10 psi remains in the brake cylinder after a preset time. This checks for a defective retainer that allows brake cylinder pressure to zero. If the cylinder leaks to zero before the previous test, the test will pass because no drop can occur from zero. This is also part of the retainer test.

#### BC < 5

After moving the retainer to Direct Exhaust, the ASCTD will confirm that brake cylinder pressure reduces. This is part of the retainer test.

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### HAND BRAKE SYSTEM OK

Confirmation that the hand brake has been inspected and lubricated.

 **WARNING:** Use caution to prevent personal injury from moving parts.

### FLOW < Limit

The ASCTD will confirm the system has flowrated to less than 225 cubic inches/minute (60 cubic inches/minute for the "dead ball" option). After the system flowrates, the device will wait an additional time-out before recording the results. This is the system leakage test.

### c. B-1 AAV

(B-1 Quick Service Valve Test)

### B-1 CHARACTERISTIC COUNT > 0

The ASCTD will confirm an increase in the reduction rate of brake pipe pressure. This will ensure that the B-1 Quick Service Valve is operating.

### d. SYSTEM STABILITY

(System Service Stability Test - cut out cock open)

### BP > 5

The ASCTD will confirm the system did not go to an emergency application, and that brake pipe pressure remains.

### BP DROP < 1

The ASCTD will confirm the Accelerated Application Valve does not continue to reduce brake pipe after the reduction has stopped.

### PISTON TRAVEL WITHIN LIMITS

Confirmation that the operator has measured piston travel and it is correct.

### RIGGING SYSTEM OK

Confirmation that the operator has checked the rigging for any binding or fouling.

### e. MANUAL RELEASE

#### AUX < = 1 PSI DROP

#### EM < = 1 PSI DROP

#### BC < 5

After the manual release rod is pulled for 3 seconds, the ASCTD will confirm that auxiliary and emergency reservoir pressures do not decrease during a preset time. This checks for leakage at the manual release valve. The ASCTD will also confirm that brake cylinder pressure reduces. This checks the operation of the manual quick release function.

#### BP INCREASE < 2.5

After the manual release rod is pulled, the ASCTD will confirm that brake pipe does not increase during a preset time. This checks proper operation of the release valve, to avoid recharging brake pipe.



**f. VENT VALVE TEST**

(Vent Valve Emergency Test)

**BP < 7**

The ASCTD will confirm the auxiliary venting device (vent valve or separate emergency portion) goes to emergency, and brake pipe pressure. This checks proper operation of the vent valve or separate emergency portion.

**g. CUT OUT/MINIMUM APPLICATION TEST**

(Minimum Application and Applied Leakage Test)

**DUMMY CONNECTORS REMOVED**

Confirmation that the operator has removed the dummy couplings.

**BC < 5**

BC remains in released position.

**BP DROP > = 3**

The ASCTD will generate a 3 psi brake pipe reduction for the brake cylinder increase test.

**BC INCREASE TO > = 6**

After the 6 psi brake pipe drop, the ASCTD will confirm that brake cylinder pressure increases. This checks that a brake application is obtained with a minimum application.

**BC DROP < 0.5**

During the applied leakage test, the ASCTD will confirm the brake cylinder pressure does not decrease during a preset time. This checks for leakage out of auxiliary reservoir.

**BC > 10 & BC < 35**

The ASCTD will generate brake cylinder pressure for the applied leakage test.

**BC CHANGE -1.3 TO 1.3**

During the applied leakage test, the ASCTD will confirm the brake cylinder pressure does not decrease or increase during a preset time. This checks for leakage out of or into brake cylinder.

**AX CHANGE < 0.7**

During the applied leakage test, the ASCTD will confirm the monitored auxiliary reservoir pressure does not decrease during a preset time. This checks for auxiliary reservoir leakage.

**EM DROP < 1**

During the applied leakage test, the ASCTD will confirm the monitored emergency reservoir pressure does not decrease during a preset time. This checks for emergency reservoir leakage.

**FLOW < Limit**

During the applied leakage test, the ASCTD will confirm that the system has flowrated to less than 275 cubic inches/minute. This checks the brake pipe and cut-out cock leakage.

## ***ASCTD User's & Set-up Manual***

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### **SLOPE CHANGE FOUND**

The ASCTD will confirm an increase in the reduction rate for brake pipe pressure. This is the AAV test which checks the Accelerated Application Valve function in the emergency valve.

### **BC > = 5**

The ASCTD decreases the brake cylinder pressure and then stops. The Quick Service Limiting Valve must reopen and increase brake cylinder pressure. The ASCTD will confirm the brake cylinder pressure increases. This is the quick service limiting valve test.

### ***h. SERVICE RELEASE***

(Slow Release Test)

### **BP - AX > = 0.7 AND < = 2.2**

The ASCTD will increase brake pipe at a controlled rate. After the control valve goes to release position, the ASCTD will confirm that brake pipe pressure is higher than auxiliary reservoir pressure. This checks the sensitivity of the service portion.

### **RELEASE TIME < = 90**

The ASCTD confirms that the release differential is obtained within 90 seconds.

### ***i. SERVICE STABILITY***

(Control Valve Service Stability Test - cut-out cock closed)

### **BP > 5**

The ASCTD will confirm the control valve did not go to an emergency application, and that brake pipe pressure remains.

### **BP DROP < 1.0**

The ASCTD will confirm the Accelerated Application Valve does not continue to reduce brake pipe after the reduction has stopped. Brake pipe pressure does not drop during a preset time.

### ***j. EMERGENCY TEST***

(Control Valve Emergency Test)

### **EM BC – FS BC > 5**

Emergency Brake Cylinder pressure at least 5 psi higher than Full Service.

### **BP < 5**

The ASCTD will confirm the control valve goes to an emergency application, and brake pipe pressure reduces. This checks the function of the vent valve in the emergency portion.

### ***k. HIGH PRESSURE MOVEMENT***

#### **AX, EM, BC WITHIN 5 PSI**

After the emergency application, the ASCTD will confirm that auxiliary, emergency and brake cylinder pressures are all equalized. This checks the function of the high pressure spool valve in the emergency portion.

### **BP < 2**

After the emergency application, the ASCTD will confirm the brake pipe pressure does not increase during a preset time. This checks for leakage into brake pipe. Note: This result will read unused unless previous test failed.

**PISTON TRAVEL NOMINALLY  
THE SAME**

Confirmation that the operator has measured Piston travel and is nominally the same as measured before.

**⚠ WARNING:** Use caution to prevent personal injury from moving parts.

**I. EMERGENCY ACCELERATED RELEASE**
**BP > 32**

The ASCTD increases brake pipe to 28 psi and then stops. The ASCTD will confirm that brake pipe pressure continues to increase. This checks the emergency accelerated release function in the emergency portion.

**m. EMPTY LOAD TEST**
**PRESSURE DIFFERENCE**

Empty Brake Cylinder pressure greater than or equal to 20 psi less than loaded pressure.

**EMPTY E/L BC > 10**

Brake Cylinder pressure greater than 10 psi.

**E/L SOAP NO LEAKAGE**

No leakage on Empty Load equipment during soap test.

**o. DISCONNECT**
**NO RECEIVER COVER LEAKAGE**

Confirmation that the operator has attached the cover to the receiver and the cover is sealed tight.

**RESERVOIR DRAINED**

Confirmation that the operator has drained the reservoirs by pulling the manual release rod.

**ASCTD DOWNLOAD INSTRUCTIONS**

1. Turn "ON" ASCTD and PC.
2. Connect null modem serial cable from PC to ASCTD.
3. From ASCTD **MAIN MENU** select option **[5-UTILITIES]** and enter password.
4. From **UTILITIES MENU** select option **[4-Results]** and enter password.
5. Select option **[2-TRANSFER RESULTS TO PC]**. The following message will appear on the ASCTD screen:

**DOWNLOAD PROG REQUIRES A PASSWORD**

**TYPE PASSWORD: \_**

**PRESS ENTER/YES:END BS:DEL**

6. Enter user password. Press YES/ENTER. The following message will appear on the ASCTD screen:

**START X MODEM TRANSFER RECEIVE (WITH CHECKSUM) ON HOST PC NOW! CONSOLE RS232 PORT IS AT  
38400 BAUD, 8 DATA BITS.  
PRESS ANY KEY TO START**

## **ASCTD User's & Set-up Manual**

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**NOTE: DO NOT PRESS ANY KEYS ON THE ASCTD AT THIS TIME.**

7. Select the X Modem16 Application from the program manager on your PC. The following window should appear.
8. On the PC, click on Eile at the top of the Xmodem16 program window; from the drop down menu select Start Transfer.
9. Press YES on ASCTD to begin downloading process.
10. After all the files are downloaded to the PC, Transfer Completed should appear on the PC. Click "OK" to continue.
11. The following screen should appear on the ASCTD:

**TRANSFERRING RESULTS TO PC**

**RESULT:**

**FINISHED**

**PRESS ANY KEY TO CONTINUE**

PRESS ANY KEY ON THE ASCTD AND REPEAT STEPS 4-9 TO DOWNLOAD TESTER AGAIN. DISCONNECT NULL MODEM CABLE AFTER SECOND TRANSFER HAS BEEN COMPLETED.

12. The data files are stored in an RX\_ FILES subdirectory of the X Modem16 application. The range for the received file names is from Asctw000.dat to Asctw999.dat. Check the RX\_FILE subdirectory and compare the file sizes of the last two files downloaded (will be the files with the highest numbers). Both files should be the same size, this ensures the download process was properly completed.

13. Format the D drive on the ASCTD-this will erase all results!

From **MAIN MENU** select option **[5-UTILITIES]** and enter password.

From **UTILITIES MENU** select option **[6-DISK]** and enter password.

Select option **[2-FORMAT]** and press YES to format. ASCTD will format, press any key when done.

14. Verify format. From **UTILITIES MENU** select option **[4-RESULTS]**.

Select option **[1-SELECT AND DISPLAY RESULTS]**.

ASCTD display should read **NO RESULTS FOUND**.

Exit to **MAIN MENU**.

**ASCTD External Database Program**  
**P.C.# 0310337 Rev F**
**User's Manual**

Revision D

WABCO - [Automated Single Car Test]							
File Utilities Reports Help							
Test Date	Car Number	Lot Number	Stamp Number	Oper.	Test Type	Overall Flag	Location
2000-01-19 11:42:22	71-14407 27			MB	SCT	Passed	<none>
2000-01-19 02:47:07	49	71 12427		CL	SCT	Passed	<none>
2000-01-19 01:42:37	48	71 21427		CL	SCT	Passed	<none>
2000-01-19 00:37:12	9	71 15846		CL	SCT	Passed	<none>
2000-01-18 22:13:14	20	71 14407		CL	SCT	Passed	<none>
2000-01-18 13:59:59	71-15843 11			MB	SCT	Passed	<none>
2000-01-18 11:39:51	71-12427 43			RE	SCT	Passed	<none>
2000-01-18 09:23:05	71-15842 22			RE	SCT	Passed	<none>
2000-01-18 04:40:20	26	71 14407		CL	SCT	Passed	<none>
2000-01-18 01:17:00	10	71 15846		CL	SCT	Passed	<none>
2000-01-14 12:05:47	71-14407 21			RE	SCT	Failed	<none>
2000-01-14 10:59:36	71-15842 16			RE	SCT	Passed	<none>
2000-01-14 10:44:14	71-15842 16			RE	SCT	Failed	<none>
2000-01-14 05:56:31	18	71 15842		CL	SCT	Passed	<none>
2000-01-14 04:20:20	17	71 15842		CL	SCT	Passed	<none>
2000-01-13 15:56:26	71-15843 7			RE	SCT	Passed	<none>
2000-01-13 13:28:50	71-15842 15			RE	SCT	Passed	<none>
2000-01-13 10:24:54	71-15842 13			RE	SCT	Passed	<none>
2000-01-13 08:38:46	71-15842 12			RE	SCT	Passed	<none>
2000-01-13 03:44:08	39	71 12427		CL	SCT	Passed	<none>
2000-01-12 14:06:58	71-15843 6			RE	SCT	Passed	<none>

Ready!

Records 699 2000-06-29 10:07:27

## ***ASCTD User's & Set-up Manual***

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### **9.0 EXTERNAL DATABASE**

Wabtec Corporation's external database program **ASCT.EXE** permits users to store, retrieve, query and generate reports of tests performed by Wabtec Corporation's Automated Single Car Test Device (ASCTD). The PC-based software is designed around the Microsoft Windows Operating System 3.1 or greater. **ASCT.EXE** was designed to handle a 300 Mb database, approximately 10 years of ASCTD results.

#### **System Hardware Requirements:**

The following table lists the minimum level of computer hardware needed to effectively use the Wabtec Corporation ASCT Database program.

#### **Device Minimum Required**

Processor: Pentium P5-90 Processor

Memory: 16 MB RAM

Central Storage Device: 500 MB Hard Drive

**NOTE:** Normal database maintenance operations require hard drive storage at least twice the expected database size.

Disk Drive: 3.5" 1.44 MB Disk Drive

Graphics: 640 X 480 X 256 VGA Small Fonts

Additional Requirements: Mouse, 1 available COM port, LPT port for Printer Interface, Microsoft Windows 3.1.

- Using ASCT.EXE the user will take a file of results taken from the Automated Single Car Test Device (ASCTD) and start an import process where the results will be validated and then stored in the database. The stored results can be viewed on the main screen grid where a detailed view is possible by double-clicking on any record. The detailed view can be printed on a separate report.
- The user can filter records by the main criteria which is displayed as headers on the grid columns. Additionally the columns can be sorted by clicking on the column headers.
- The data stored in the database can also be exported to a file where it can be transported to another machine and imported into another database on another machine.

**NOTE:** See the Automated Single Car Test Device (ASCTD) User Manual for assistance in obtaining the results file for import into the database.

## 9.1 IMPORT DATA FORMAT

To be imported into the database, the ASCTD Results file must be in the upload format Revision R, 6/16/97 or later. The ASCT.EXE program validates all fields in each record when the record matches the above format and version.

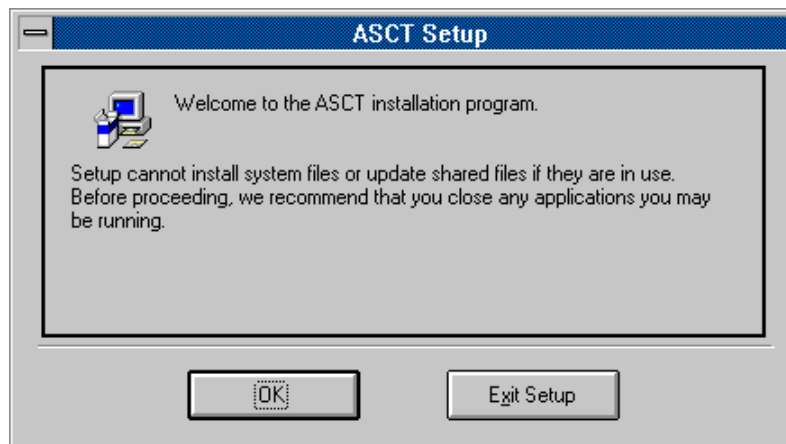
## 9.2 PROGRAM INSTALLATION

The ASCT.EXE is shipped with its own installation program.

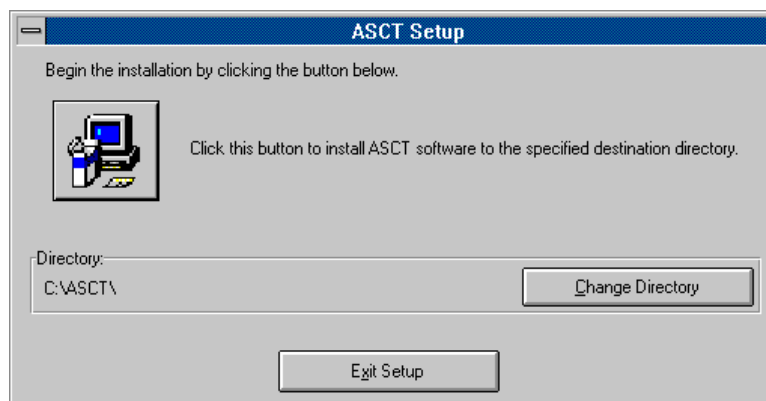
- To install ASCT.EXE on the computer
  1. Put disk 1 of the ASCT disk set in the floppy disk drive.
  2. Select Run from the Program manager File menu.
  3. Type a: setup.exe and press enter.
  4. The setup program will proceed to install the program.
  5. The User designated as the local SuperUser will have to assign users to the program before anyone else can logon. See User Maintenance for instructions.

**NOTE:** Make sure there is no other application running.

- This is the first screen from installation procedure. Click OK button to continue.



- This is the second screen of installation procedure. You have the option to change the destination directory. Default is C:\ASCT.





## ASCTD User's & Set-up Manual

- Installation of ASCT application was completed successfully and the above message box appears.



### 10.0 USING ASCT.EXE

ASCT.EXE is a Windows program using typical Windows procedures to activate features. If you are familiar with Windows, using the ASCT database program will be very easy.



- To start ASCT.EXE double-click on the application icon (Figure 1) in the program manager. The user must first logon to the application.
- The installation program automatically installs the icon and a program group for the ASCT.EXE program.

### 10.1 ASCT LOGON

The logon screen (See Figure 2) is the first screen the user sees after starting the ASCT.EXE program. The User must enter their User ID and password to access the Main Screen.

The application stores the users and the passwords in a file with the database. Only Wabtec Corporation personnel or the user designated as the SuperUser can add or delete users. Any user can change their password once logged on to the application. The maximum character length for the User ID is 32 characters and the maximum length for the password is 64 characters.

The User ID is saved from the last logon if there was one and the user is automatically placed to enter text at the password edit box. The logon will only allow three unsuccessful attempts to logon; failure to logon will cause the application to quit. A message box appears if the password is not valid. If the logon is successful the logon screen will be replaced by the Welcome screen.

- Enter your User ID and password.
- Click on the OK button once you have typed in your User ID and password.
- Click on the Cancel button to abort. The application will quit.

**NOTE:** The SuperUser ID will never be saved as the default User.

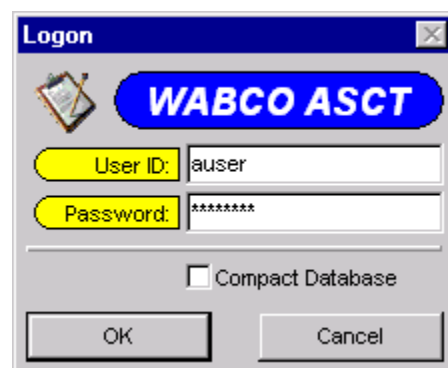


Figure 2 - ASCT.EXE Logon Screen

### 10.1.1 COMPACT DATABASE

The application can detect corruption in the database during startup. If the database needs to be repaired, the application will start the repair procedure by itself. If a repair was necessary a message box will notify you that the repair was completed and you should check the checkbox for Compact Database by clicking in the box beside Compact Database on the logon screen. The user should occasionally optimize the database by checking Compact Database at logon. The procedure takes progressively longer as the number of records imported increases and may take several minutes on a large database.

### 10.2 WELCOME SCREEN

The Welcome Screen displays program information, title, copyright etc. information before the main screen is loaded and displayed.



**Figure 3 - Welcome Screen**





- ASCT.EXE will display the Welcome Screen (Figure 3) for 3 seconds except:
- If the user selected compact at the logon screen then ASCT.EXE will display the Welcome Screen until the operation is complete with a message on the screen stating that a compact procedure is being performed.

**NOTE:** The compact database operation requires additional disk space equivalent to the current size of the database. The free disk space is checked before the compact takes place to ensure that there is sufficient disk space to continue.

### 10.3 MAIN SCREEN

The main screen shows the data grid and status bar along with the menu system. The startup state of the database has the records (no filter) displayed by date order with the most recent records displayed first.

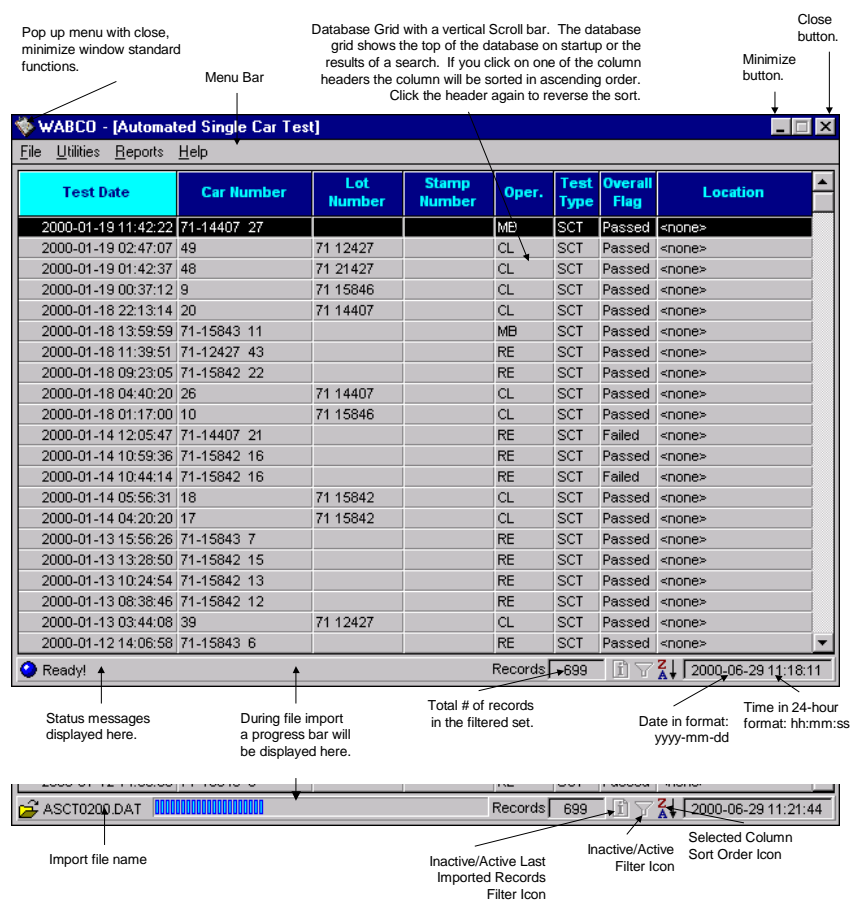
Two icons at the bottom of the window, in the status bar indicate:

- The sort order of the selected column of the table.  
 (ascending) or  (descending).
- The filtered state of the database table. This indicates whether or not you are seeing all the records or a smaller set of the table records.  
 (filtered, some of the records) or  (no filter, all the records are displayed).

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**NOTE:** The record count displayed is the count for the current set of records, if there is no filter set, all records are displayed. If a filter has been set in the Filter window, the filtered set of records will be displayed.

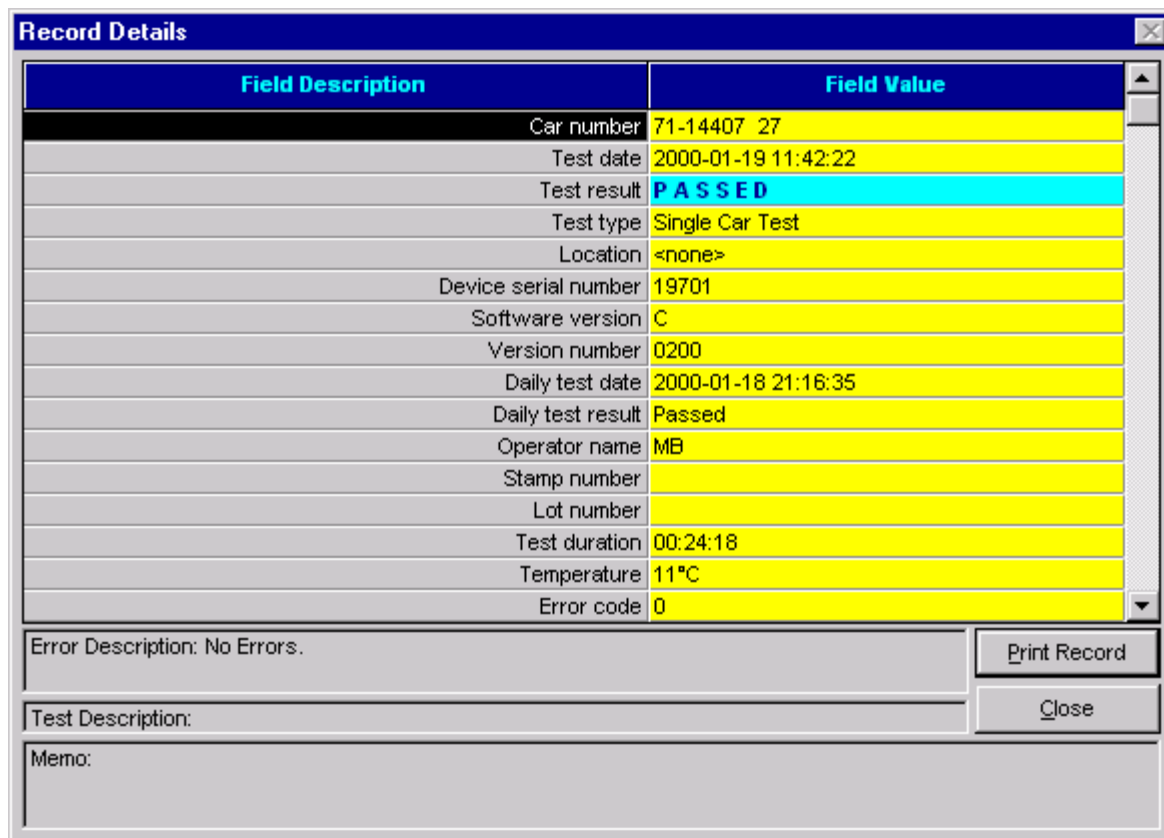
**NOTE:** Click once on a grid header to sort the list in ascending order, click again on the header to sort the list in descending order.



**Figure 4 - ASCT Main Screen with Progress Bar in cut out**

**10.3.1 RECORD DETAIL WINDOW**

- Double-clicking on any record (in any column) in the grid while records are displayed on the grid brings up the Record Details window. All results record items saved to the database are listed in the window. The memo field appears in its own box so that the user can read the entire message.
- The yellow background is changed to a red background for the fields that failed.



The screenshot shows a 'Record Details' window with a table of field values. The 'Test result' field is highlighted in red, indicating a failed test. Below the table are sections for Error Description, Test Description, and Memo, along with 'Print Record' and 'Close' buttons.

Field Description	Field Value
Car number	71-14407 27
Test date	2000-01-19 11:42:22
Test result	<b>FAILED</b>
Test type	Single Car Test
Location	<none>
Device serial number	19701
Software version	C
Version number	0200
Daily test date	2000-01-18 21:16:35
Daily test result	Passed
Operator name	MB
Stamp number	
Lot number	
Test duration	00:24:18
Temperature	11°C
Error code	0

Error Description: No Errors.

Test Description:

Memo:

Print Record

Close

**Figure 5 - Record Details Window**

- Click on the Print Record button to print a Detail Report for this record (see section on Reporting for details and example).
- Click on the Close button to close the Record Details Window and return to the Main Screen.

**10.4 MENUS AND COMMAND DEFINITIONS**

The ASCT.EXE program uses a standard Windows menu system to access program functions. The menu system is different for SuperUsers and for Users. The SuperUser has access to additional program functions for maintaining the user database and the SuperUser can view the SQL statement used to filter the database.

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### 10.4.1 MENU SYSTEM FOR THE ASCT PROGRAM

- NOTE:** The menu displayed is the menu the SuperUser sees. This menu includes the Users Maintenance under the Utility menu. This command is not seen by other users. The File, Reports, and Help menus are the same for all users.

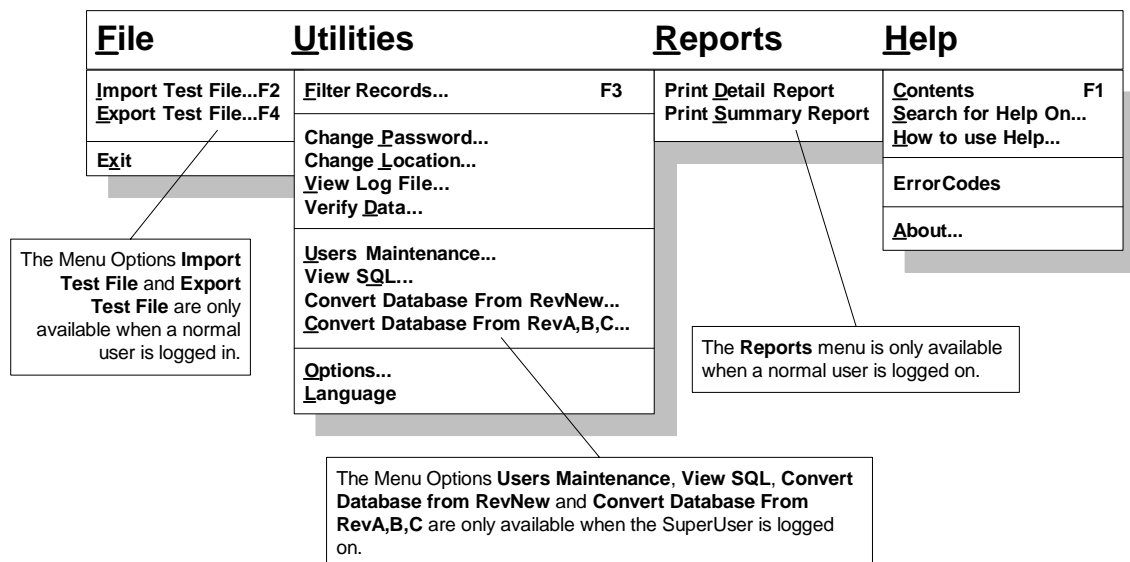


Figure 6 - ASCT Program Menu System

### 10.5 USING ASCT.EXE - IMPORT TEST FILE .... F2

- Select Import Test File from the File menu or press F2.

**NOTE:** Although typical import files will be relatively small (<1000 records) it is possible to import a previously exported file. It should be noted that the import time will be increased as the import file size is increased. The progress bar will accurately reflect the progress of the import though the progress bar updates will occur less frequently.

- Select the Import file

Select the source drive, directory/folder, and file for import into the database.

ASCT.EXE automatically searches for a disk in drive A: first, then in the directory where ASCT.EXE is stored. The Import Test File window is preset to only display files of the type from the ASCTD. The file to be imported must be selected from the list or the exact file name typed in the File Name box. Press OK to continue or cancel to abort the import.

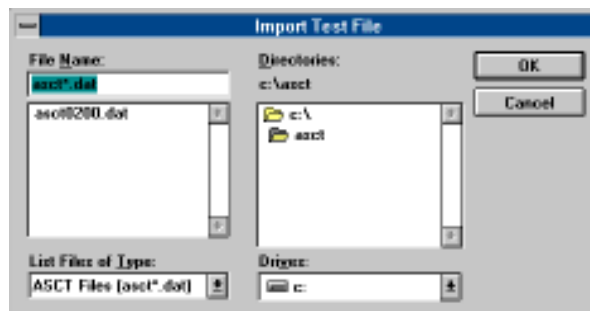
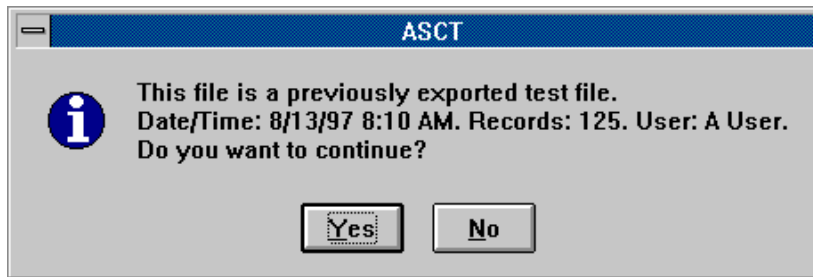


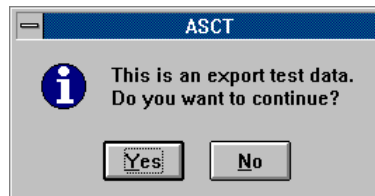
Figure 7 - Import Test File Open Dialog

- ASCT.EXE will display the message box below (Figure 8 ) if the import file is a previously exported file.



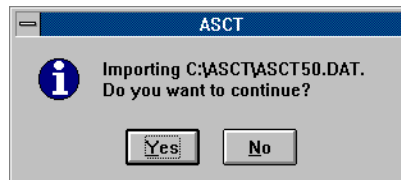
**Figure 8 - You selected an ASCT Export File**

- Click the "Yes" button to continue importing a previously exported file.
- The following message is displayed informing the user of the export file size so that if the file is larger the user is aware before the import takes place.



**Figure 9 - ASCT Export file details**

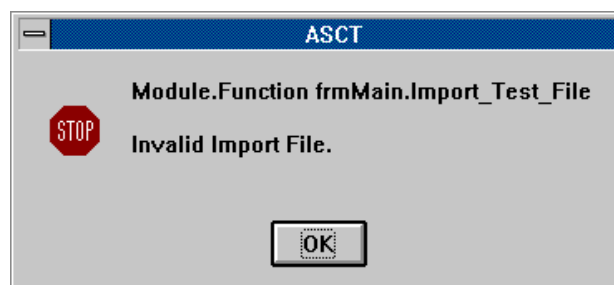
If Import File is a valid ASCTD Test Results file the message box below will be displayed.



**Figure 10 - You have selected an ASCT Results File**

- Click on "Yes" to Continue with the import.

**NOTE:** If the file does not appear to be an ASCT Results file then the following message box will be displayed. Click on the OK button to abort the import function.



**Figure 11 - Invalid Import File Message**

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### Start ASCT Result File Import into the database

- The menu will be disabled while a file is being imported.
- The status bar at the bottom of the main screen will display a file open icon with the import file name. As the file is imported the status bar will update a bar to indicate relative progress.
- When the import process is complete the Display summary message box appears (Figure 12 - Import File Summary Message Box).
- Duplicate records are automatically excluded from the database. Duplicate records are the result of not clearing test records from the ASCTD after importing to the database.
- Invalid records are records that are not complete or records that are not in the format expected by the ASCT.EXE program.

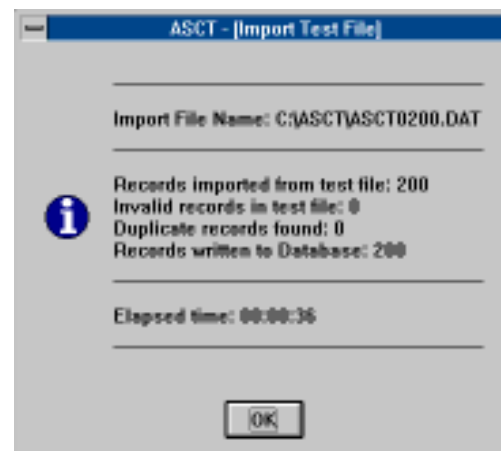


Figure 12 - Import File Summary Message Box

### 10.6 USING ASCT.EXE - EXPORT TEST FILE .... F4

The export function will copy database records selected by the current filter to a file in the same format as the import file. This will allow the user to transfer records to another database. The ASCT.exe application changes only the comment field to indicate to the program on import that the file is a previously exported file. The comment line also contains the User name and the date time of export as well as the number of records in the file.

**NOTE:** If the current filter returns no records or the database is empty the menu option for export will be disabled.

- Select Export Test File from the File menu or press F4.
- The Export Test File dialog is presented (Figure 13 - Export File Dialog)

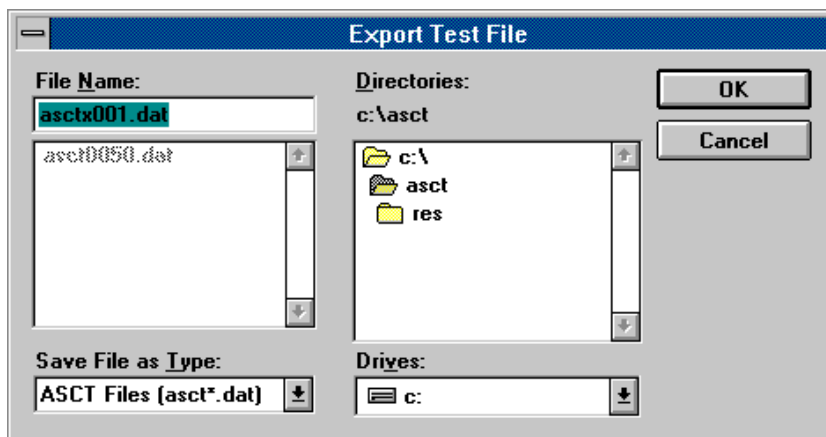


Figure 13 - Export File Dialog

The default name for the export file is ASCTX???.dat where the X defines the file as an export file and the ??? is a consecutive number. The file name can be changed by the user as well as the destination for the exported file.

- If the destination file exists the message box below will be displayed.

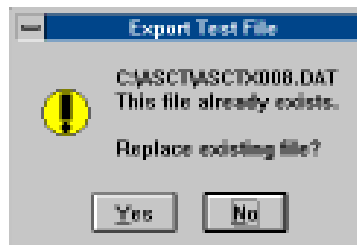
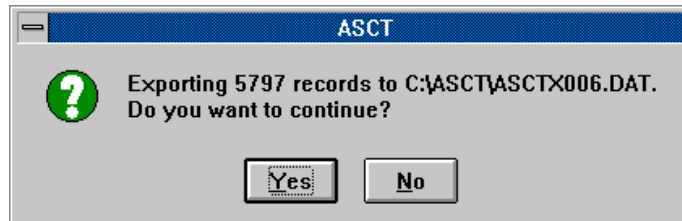


Figure 14 - Export File - Destination file exists message box



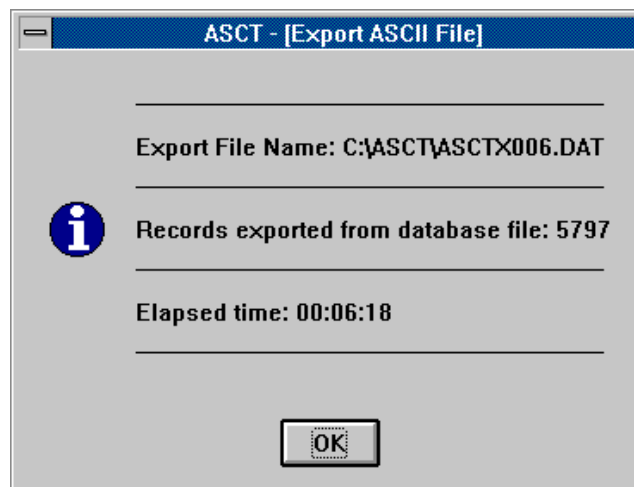
If the user clicks Yes then the export file will overwrite the existing file, otherwise the user will be able to select another filename from the Export dialog.

- The user is prompted by a message box (Figure 15) before the export will continue.



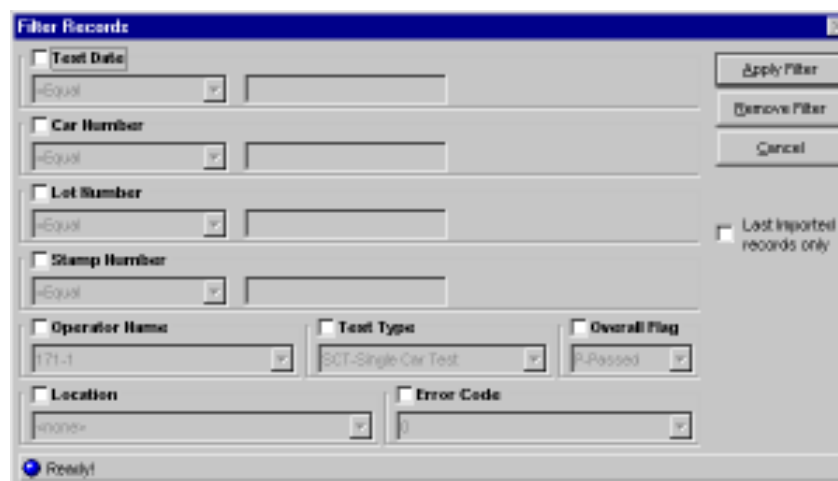
**Figure 15 - Export File - Continue Message**

- The export file summary message (Figure 16).



**Figure 16 - Export File Summary Message**

## 10.7 THE FILTER WINDOW



**Figure 17 - Filter Screen , Define Filter Window**

**NOTE:** The display grid might be empty if the filter is set for values that have been deleted or do not exist in the table.

**NOTE:** If the checkbox is not activated the field will not be included in the filter even though there is other filter information in the edit fields following.

## ASCTD User's & Set-up Manual

### To Apply a Filter to the database:

- The User must activate a filter field by clicking on the checkbox for that field.
- Select a comparison method.
- Complete the edit box. For all comparison types except begins with and contains, you must type the exact information that will be filtered.
- When all the checkboxes and text boxes are complete, click on the Apply Filter Button.

The filtered state of the database table is indicated by the funnel icon on the status bar on the main screen. This indicates whether or not you are seeing all the records or a smaller set of the table records. (filtered, some of the records) or (no filter, all the records are displayed).

**Table of filter fields and combo box items**

Test Date	<ul style="list-style-type: none"> <li>• = EQUAL the test date is identical to the date entered in the edit box.</li> <li>• BETWEEN the test dates falls between the dates entered in the two edit boxes. The second edit box appears only when between is selected.</li> <li>• &lt; The test date is less than the date entered in the edit box.</li> <li>• &lt;= The test date is less than or equal to the date entered in the edit box.</li> <li>• &gt; The test date is greater than the date entered in the edit box.</li> <li>• &gt;= The test date is greater than or equal to the date entered in the edit box.</li> </ul> <p><b>Tip:</b> You can type "today" or "now" in the edit box to have today's date.</p>
Car Number	The Car Number filter field includes all of the operators above plus: <ul style="list-style-type: none"> <li>• Begins With the Car Number begins with the characters in the edit box. Contains. The Car Number contains the characters in the edit box. (See note following this table)</li> </ul>
Lot Number	The Lot Number filter field includes the same operators as the Car Number Field.
Stamp Number	The Stamp Number filter field includes the same operators as the Car Number Field.
Operator Name	<ul style="list-style-type: none"> <li>• = EQUAL the Operator Name is identical to the Operator Name entered in the edit box.</li> <li>• Begins With the Operator Name begins with the characters in the edit box.</li> <li>• Contains The Operator Name contains the characters in the edit box.</li> </ul>
Location	<ul style="list-style-type: none"> <li>• Any valid location from the pull-down menu</li> </ul>
Test Type	<ul style="list-style-type: none"> <li>• Single Car Tests or Repair Track Tests</li> </ul>
Overall Flag	<ul style="list-style-type: none"> <li>• Passed</li> <li>• Failed</li> <li>• Quit</li> </ul>
Error Code	<ul style="list-style-type: none"> <li>• Select and error code from the pull-down menu</li> </ul>

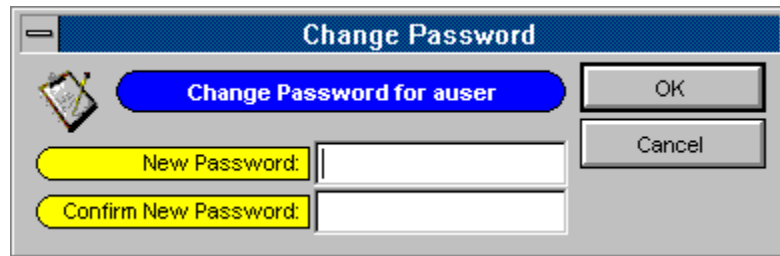
**NOTE:** The contains comparison can cause a very long search time to be incurred as the search value is matched incrementally along the search field. As the database grows in size the search times will also compound this search time.

## 10.8 CHANGE PASSWORDS SCREEN

The User's default password is **password**, to change this:

- Select Change Password from the Utilities Menu.
- Type in the new password and retype the password in the confirmation edit box to set the password.

The SuperUser can clear the passwords but cannot view, or change a password. The SuperUser must clear a password, then let the user change from the default password.



The screenshot shows a 'Change Password' dialog box. It has a title bar 'Change Password'. Inside, there is a blue button labeled 'Change Password for auser'. To the right are 'OK' and 'Cancel' buttons. Below the button are two input fields: 'New Password:' and 'Confirm New Password:'. There is also a small icon of a notepad and pencil on the left.

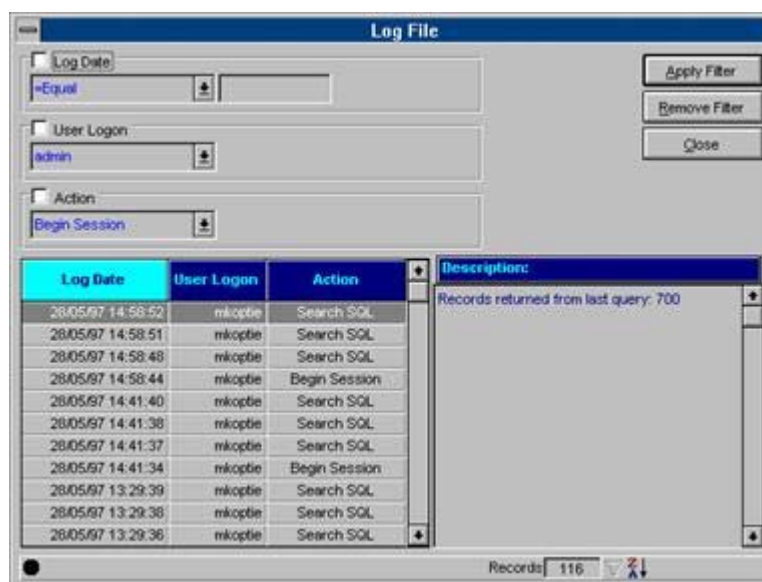
**Figure 18 - Change Passwords Screen**

## 10.9 LOG FILE DISPLAY WINDOW

The Log File display window (Figure 19 - Log File Display and Filter Window) includes a filter capability where log file information can be queried by one of or a combination of log file date, user logon, or database file action. The Log File display is filtered by user so the user only sees the user's own log records. The log file data display grid is similar to the Main Grid and the User Maintenance data grid where the column can be sorted by clicking on the header. The Status bar icons function identically to the status bar icons on the main screen.

For information on using the filters, please review the main grid filter section.

**NOTE:** The Log File Display Window will have a Delete Button which will allow the SuperUser to Delete records selected by the filter. This button only appears when the SuperUser is logged on.



The screenshot shows the 'Log File' window. It has a title bar 'Log File'. On the left, there are three filter sections: 'Log Date' with a dropdown set to '=Equal', 'User Logon' with a dropdown set to 'admin', and 'Action' with a dropdown set to 'Begin Session'. On the right, there are buttons for 'Apply Filter', 'Remove Filter', and 'Close'. Below the filters is a table with columns: 'Log Date', 'User Logon', 'Action', and 'Description'. The table contains 11 rows of log data. At the bottom right, there is a status bar showing 'Records: 116'.

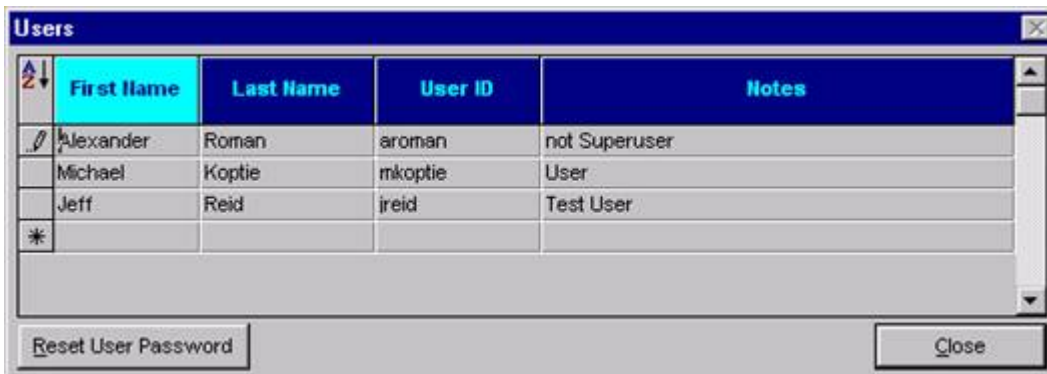
Log Date	User Logon	Action	Description
26/05/97 14:58:52	mkoptie	Search SQL	
26/05/97 14:58:51	mkoptie	Search SQL	
26/05/97 14:58:48	mkoptie	Search SQL	
26/05/97 14:58:44	mkoptie	Begin Session	
26/05/97 14:41:40	mkoptie	Search SQL	
26/05/97 14:41:38	mkoptie	Search SQL	
26/05/97 14:41:37	mkoptie	Search SQL	
26/05/97 14:41:34	mkoptie	Begin Session	
26/05/97 13:29:39	mkoptie	Search SQL	
26/05/97 13:29:38	mkoptie	Search SQL	
26/05/97 13:29:36	mkoptie	Search SQL	

**Figure 19 - Log File Display and Filter Window**

## ASCTD User's & Set-up Manual

### 11.0 USERS MAINTENANCE SCREEN - SUPERUSER ACCESS ONLY

The SuperUser can add database users. The SuperUser cannot assign or read the passwords, the SuperUser can clear the passwords but cannot view, or change a password. The SuperUser must clear a password, then let the user change from the default password from the Change Passwords screen (**Error! Reference source not found.**). All fields on the Grid can be edited. You can select and change the text in any field. When the grid is full, a new line will be generated for the next user. It is necessary to click on another field or line to have the changes saved to the file.



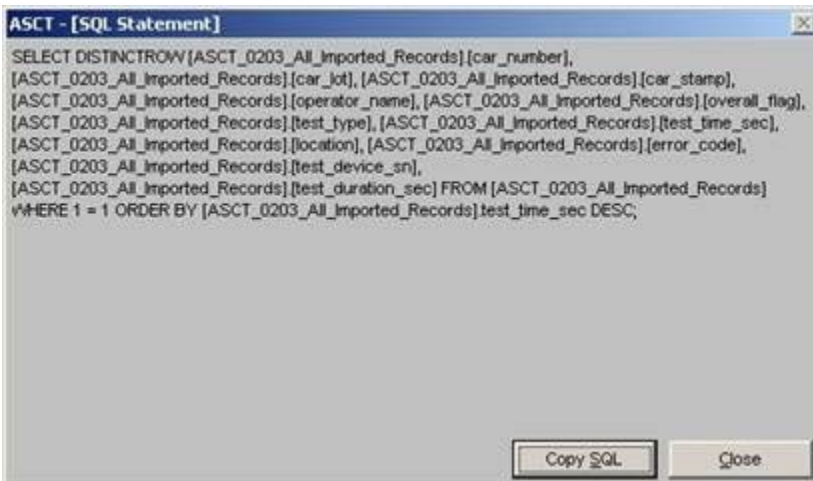
	First Name	Last Name	User ID	Notes
	Alexander	Roman	aroman	not Superuser
	Michael	Koptie	mkoptie	User
	Jeff	Reid	jreid	Test User
*				

Reset User Password Close

Figure 20 - Add Users Screen (SuperUser Only)

### 11.1 THE SQL STATEMENT WINDOW - SUPERUSER ACCESS ONLY

The Filter Window sets the criteria for the application to write a SQL (SuperUser) statement that is used by the application to extract a set of records from the database. This statement window is provided to confirm the statement. The copy function allows advanced users to copy the query into Microsoft Access and extract the same data for custom reporting etc. The SQL statement is also written to the log file for diagnostic and support functions.



```

SELECT DISTINCTROW([ASCT_0203_All_Imported_Records].[car_number],
[ASCT_0203_All_Imported_Records].[car_lot], [ASCT_0203_All_Imported_Records].[car_stamp],
[ASCT_0203_All_Imported_Records].[operator_name], [ASCT_0203_All_Imported_Records].[overall_flag],
[ASCT_0203_All_Imported_Records].[test_type], [ASCT_0203_All_Imported_Records].[test_time_sec],
[ASCT_0203_All_Imported_Records].[location], [ASCT_0203_All_Imported_Records].[error_code],
[ASCT_0203_All_Imported_Records].[test_device_sn],
[ASCT_0203_All_Imported_Records].[test_duration_sec] FROM [ASCT_0203_All_Imported_Records]
WHERE 1 = 1 ORDER BY [ASCT_0203_All_Imported_Records].[test_time_sec] DESC;
  
```

Copy SQL Close

Figure 21 - View Current SQL Statement Window

## 11.2 EXTERNAL DATABASE REPORTS

The first release of the ASCT program prints two reports:

**1. Detail Report** - The Detail Report is a single page report listing the results for the current record when printed from the detail record window. The report may be several pages with one page printed per result, of the records displayed by the current filter. This last option is selected from the menu.

**2. Summary Report** - The Summary Report prints the fields displayed on the grid Test date, Car Number, Lot Number, Stamp Number, Operator Name, Test Type, and Overall Pass / Fail. This report prints these details on one line for each record of the filtered set. The summary report is printed from the menu option.

**NOTE:** If no records are displayed on the grid, the result of a filter or a new installation, the menu options to print will be disabled.

**Sample reports on following pages.**



## ASCTD User's & Set-up Manual

### 11.2.1 DETAIL REPORT SAMPLE - ASCT TEST PASSED


 <b>ASCT - Detail Report</b> 2002-10-01 20:56:31		Car number 11 Test date 2002-09-11 11:44:08 Test result P A S S E D Test type Single Car Test Location <none>	
<b>General Information</b>			
Device serial number	89805	Software version	G.0.0
Last Daily Test Passed	2002-09-05 14:21:18	Operator name	BC
Lot number	1111	Test duration	01:12:54
Error code	0	Version number	0203
		Stamp number	111
		Calibration time	2002-07-10 14:28:03
Error Description: No Errors. Test Description:			
<b>Setup Options</b>			
Car stamp and lot ID fields option		Yes	Low system leakage for the car builder option
			60 in. <sup>3</sup> /min.
<b>Control Valve Configuration</b>			
Is emergency portion an ABD/ABDS?		No	Vent valve
			Yes
Separate emergency portion		No	B-1 valve
			No
Automatic slack adjuster(s)		Yes	Brake pipe length [feet]
			75
<b>General Inspection Results</b>			
Has the general inspection been run?		Yes	Brake cylinders fail to return
			No
Brake shoe problems		No	Problems with levers and pins
			No
Rigging binds or fouls		No	Problem with brake hoses
			No
Car equipped with E/L device		Yes	Car empty
			Yes
Car equipped with BC pressure tap		Yes	BC Pressure tap downstream of E/L
			Yes
<b>Interface Connection</b>			
			Connected to car and air
			Yes
<b>Open BPCC and Set Retainer</b>			
			Angle and cut-out cocks open
			Yes
<b>Flow Through Test</b>			
			Air flows through each hose connector
			Yes
<b>Connect Dummy Couplings</b>			
			Dummy connectors installed
			Yes
<b>Check that AUX and EM are charging with BP = 20 psi</b>			
AX increase is OK for a 15 second wait with BP at 20 psi		Passed	Range(1.00 - 8.00)[psi]. Value
			3.137
EM increase is OK for a 15 second wait with BP at 20 psi		Passed	Range(0.30 - 5.00)[psi]. Value
			1.129
<b>Retainer Leakage Test</b>			
No retainer blow if BC < 1.5 for 10 seconds		Passed	Range(<=1.50)[psi]. Value
			0.052
No significant BC drop for 20 seconds with BC = 16 psi		Passed	Range(<=1.50)[psi]. Value
			0.700
BC pressure always > 10 psi during the 20 second wait		Passed	Range(>=10)[psi]. Value
			13.293
BC drops with retainer in exhaust		Passed	Range(<=5.00)[psi]. Value
			4.985
<b>Hand Brake Inspection</b>			
			Hand brake system OK
			Yes
<b>Charge/System Leakage Test</b>			
Steady state leakage rate when charged is OK		Passed	Range(<225 or 60)[in. <sup>3</sup> /min.]. Value
			0
<b>B1 AAV Test</b>			
			B1 characteristic event(s) occurred
			N/A
<b>Vent Valve Stability / 30 PSI Reduction</b>			
No emergency occurred		Passed	Range(>5.00)[psi]. Value
			62.287
No AAV run on detected (after 15 seconds) BP drop < 1		Passed	Range(<1.00)[psi]. Value
			-0.414
<b>Piston Travel with blocks</b>			
Piston travel within limits		Yes	Piston travel
			5.500
<b>Rigging check with blocks</b>			
Rigging system OK. No binding or fouling		Yes	Rack extension
			0
<b>Manual Release Valve Test</b>			
			Final BP Pressure - Range(<=7.00)[psi]. Value
			0.027
AX drop for 10 seconds after manual release is OK		Passed	Range(<=1.00)[psi]. Value
			-0.375
EM drop for 10 seconds after manual release is OK		Passed	Range(<=1.00)[psi]. Value
			-0.046
BC pressure after manual release is OK		Passed	Range(<=3.00)[psi]. Value
			-0.046
BP increase for 10 seconds after manual release is OK		Passed	Range(<=2.50)[psi]. Value
			0.012
<b>Vent Valve Test</b>			
Emergency occurred with a 10 psi reduction		Passed	Range(<7.00)[psi]. Value
			0.024
<b>Remove Dummy Couplings and Close BPCC</b>			
			Dummy connectors removed
			Yes
<b>Minimum Application Test</b>			
			Always able to drop BP 3 psi for minimum application
			Passed
Minimum application occurred. BC increased to > 3 psi		Passed	Range(>=3.00)[psi]. Value
			4.539
<b>Applied Leakage Test</b>			
Applied leakage OK with respect to gross BC pressure		Passed	Range(10.00 - 35.00)[psi]. Value
			33.307
Applied leakage OK with respect to change in BC pressure		Passed	Range(-1.30 - 1.30)[psi]. Value
			-0.165
Applied leakage OK with respect to AX		Passed	Range(-0.70 - 0.70)[psi]. Value
			-0.046
Premature release in the applied leakage test		Passed	Range(<0.50)[psi]. Value
			0.015
Applied leakage OK with respect to EM		Passed	Range(<1.00)[psi]. Value
			0.085
Applied leakage OK with respect to flow		Passed	Range(<275 or 110)[in. <sup>3</sup> /min.]. Value
			-7.577
<b>Control Valve AAV Test</b>			
			Slope change found
			Passed
<b>Limiting Valve Test</b>			
Limiting valve OK		Passed	Range(>5.00)[psi]. Value
			6.180

Figure 22 - ASCT Reports - Detail Report, Passed Test

**DETAIL REPORT SAMPLE - ASCT TEST PASSED – PAGE 2****ASCT - Detail Report**

2002-10-01 20:56:33

<b>Car number</b>	<b>11</b>
<b>Test date</b>	<b>2002-09-11 11:44:08</b>
<b>Test result</b>	<b>P A S S E D</b>
<b>Test type</b>	<b>Single Car Test</b>
<b>Location</b>	<b>&lt;none&gt;</b>

<b>Service Release Test</b>			
Service release OK	Passed	Range(0.70 - 2.20)[psi]. Value	0.793
Service release time is OK	Passed	Range(0 - 90)[seconds]. Value	6.100
<b>Service Stability Test</b>			
No emergency occurred during a reduction to 64 psi using E7	Passed	Range(>5.00)[psi]. Value	65.428
No AAV run on	Passed	Range(<1.00)[psi]. Value	-1.003
<b>Emergency Test</b>			
Emergency occurred as E3 and E7 were open for 1.5 seconds	Passed	Range(<5.00)[psi]. Value	0.027
<b>High Pressure Spool Valve Movement Test</b>			
AX, EM and BC > 40 psi	Passed	Range AX(>40.0)[psi]. Value	63.621
Range EM(>40.0)[psi]. Value	63.642	Range BC(>40.0)[psi]. Value	63.588
<b>Reservoirs, BC, Leakage into BP</b>			
No leakage into BP. BP < 2 psi, 60 seconds after emergency	Passed	Range(<2.00)[psi]. Value	0.030
No leakage into BP. BP change for an extra 60 second wait	N/A	Range(<1.00)[psi]. Value	0
<b>Piston Travel without blocks</b>			
<b>Emergency Accelerated Release Test</b>			
Emergency accelerated release valve OK	Passed	Range(>30.0)[psi]. Value	45.735
<b>Empty/Load Test</b>			
Pressure difference OK	Passed	BC Pressure difference	42.000
		BC pressure E/L loaded	65.000
No test fitting leakage	Yes	BC pressure E/L empty	23.000
<b>Disconnect and Soap Test</b>			
Receiver cover sealed tight	Yes	Reservoirs drained	Yes
Billing Codes:			

**11.2.2 SUMMARY REPORT SAMPLE****ASCT - Summary Report**

2002-10-02 09:27:30

Test Date	Car Number	Lot Number	Stamp Number	Operator	Test Type	Test Result	Location
2002-09-11 13:03:31	11	1111	111	BC	Alt. 4Hr. BC Test	Passed	<none>
2002-09-11 11:44:08	11	1111	111	BC	Single Car Test	Passed	<none>
2002-09-11 11:40:42	11	1111	111	BC	Single Car Test	Failed	<none>

**Figure 23 - ASCT Reports - Summary Report**



## ASCTD User's & Set-up Manual

### 11.3 ABOUT SCREEN

The about screen displays version and copyright information to the user.

- Clicking OK clears the About box and sets the focus back to the main screen.

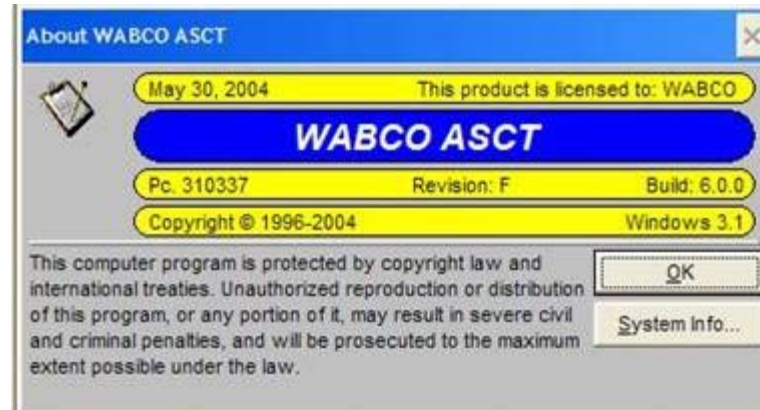


Figure 24 - About Screen

- The System Info button starts the Microsoft Windows MSInfo program to provide system information for troubleshooting.

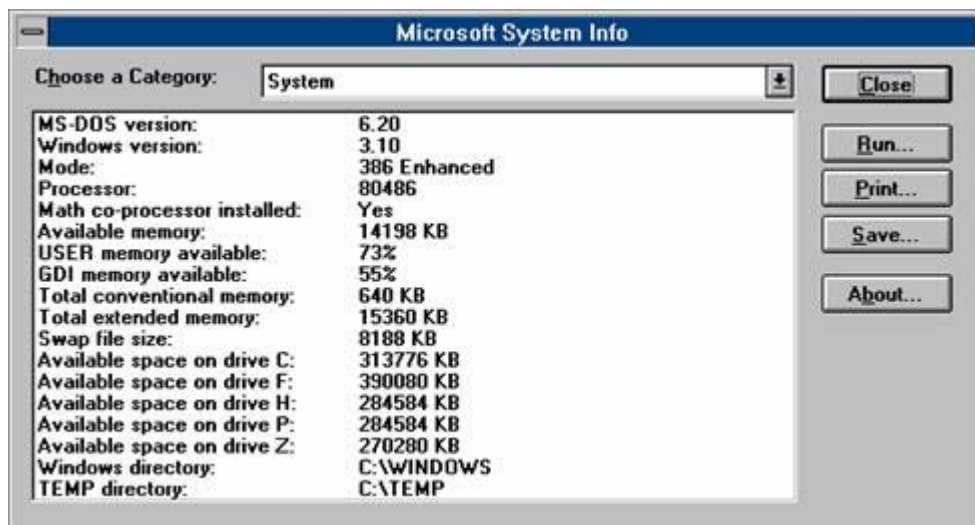


Figure 25 - System Information Screen

**REVISIONS**

The ASCT Tester External Database Program Source Details and Test Plans document revisions are listed in the table below.

**Revision A**

06/08/97 User Documentation

**Revision B**

06/29/00 Changes for software Rev D

**Revision C**

10/02/02 Changes for software Rev E

**Revision D**

24/06/04 Changes for software Rev F

## ASCTD User's & Set-up Manual

### 12.0 USER OPTIONS

The end user may choose several options from this menu. They are as follows:

**Car Identification** - The operator may include the car stamp and car lot number prompts in the Car Identification/Brake System Setup section of the Single Car Test.

**Leakage Limit** - The set leakage limit is 225 cubic inches per minute (red condemning limit on the manual test device flowrator). There is the option to default the leakage limit to 60 cubic inches per minute (dead ball on the manual test device flowrator) if desired.

### 12.1 CHANGING USER OPTIONS

Changes in the User Options are done in the following steps:

<b>MAIN MENU</b>	<b>hh:mm:ss</b>
1 - SGL. CAR TEST	4 - DAILY TEST
2 - RESERVED	5 - UTILITIES
3 - SPECIAL TESTS	6 - VENT SYSTEM
S=___ BP=___ A=___ E=___ BC=___	

Press key 5 to access the Utilities Menu.

<b>UTILITIES MENU</b>	<b>NO: EXIT !: PAGE 1</b>
1 - CALIBRATION	4 - RESULTS
2 - TIME & DATE	5 - PROGRAM
3 - PASSWORDS	6 - DISK
S=___ BP=___ A=___ E=___ BC=___	

The Utilities Menu has 2 pages. To access page 2 use the right cursor arrow key [►] at this time.

<b>UTILITIES MENU</b>	<b>NO: EXIT !: PAGE 2</b>
1 - USER OPTIONS	4 - MAG VALVE DIAG
2 - SHOW CALIBRATION	5 - LANGUAGE
3 - SHOW DAILY RESULTS	6 - UNITS
S=___ BP=___ A=___ E=___ BC=___	

Press 1 to access the User Options function.

**UTILITIES MENU REQUIRES A PASSWORD**  
**TYPE PASSWORD:**  
**PRESS ENTER/YES: END BS: DEL**  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Key in password and press ENTER.

<b>USER OPTIONS: 1-3: TGLE YES: END</b>	<b>!: PG1</b>
1-CAR IDENTIFICATION (LOT/STAMP)	Y
2-LEAKAGE LIMIT 60 CIM	N
3. RACK EXTENSION OPTION	Y
S=___ BP=___ A=___ E=___ BC=___	



### NOTES:

Use buttons 1, 2 & 3 to toggle between YES and NO.

Button 1 will toggle car identification between YES and NO. Button 2 will toggle leakage limit between YES and NO.

Button 3 will toggle rack extension option between YES and NO.

After the desired options have been selected, press YES to return to page 2 of the Utilities Menu. Press NO to return to Main Menu.

## 12.2 SCREEN INFORMATION

The test device will provide on-screen instructions, by responding to these instructions, the ASCTD will automatically move through the test procedures.

The test device will provide a **failure message** when a test procedure fails generally due to a defective air brake component or procedure. When a failure message occurs the test device may provide direction in finding and correcting the failed component or situation.

The test device will provide **error messages** when a test procedure fails due to a fault related to the test device. For error messages not correctable by the operator, contact the Wabtec Corporation Representative.

**NOTE:** Each Error message shown will have a FAULT CODE. When contacting the Wabtec Corporation Representative, please provide this fault code shown on the screen. This information will facilitate quicker and more accurate responses to problems encountered.

## 12.3 DAILY TEST FOR TEST DEVICE

**IMPORTANT:** ASCTD is to be tested each day prior to initial use, any malfunction must be corrected before testing the valves.

To perform the daily test, turn machine on by pressing the ON button. Unit will turn on and perform internal tests showing various screens. If the unit encounters problems during this procedure, it will notify the operator through a diagnostic message. Further use of the test device will not be possible until corrective action is taken. Follow screen directions, see troubleshooting guide in this book or contact your Wabtec Corporation Representative as applicable.

**NOTE:** Not all screens will be exactly as depicted in this manual, revision date of internal software will dictate the screen information shown.

### IS DATE AND TIME CORRECT?

DAY      MONTH      TIME      YEAR

PRESS YES: OK    NO: CHANGE

1 ENGLISH    2 ESPANOL    3 FRANCAIS

S=\_\_    BP=\_\_    A=\_\_    E=\_\_    BC=\_\_

If the correct time and date are shown the operator should press the YES button and test device will move to the **MAIN MENU** screen.

**MAIN MENU**      hh:mm:ss

1 - SGL. CAR TEST	4 - DAILY TEST
2 - RESERVED	5 - UTILITIES
3 - SPECIAL TESTS	6 - VENT SYSTEM
S=__    BP=__    A=__    E=__    BC=__	

Press 4 on keyboard to have unit perform the daily test.

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The result of this test is intended to be stored and saved to a data file. The results are also intended to be returned in the data file and transferred from the test device to a computer.

The **Daily Test** consists of:

- A Warning Check
- An Interface Connector Test
- A Test Plate Connection
- A Leakage Test
- A Valve Test
- Brake Cylinder Gauge Test
- An Emergency Drain Test

Running the daily test will overwrite the previous test result and may show the following screen.

### DAILY TEST

**PRESS YES: CONTINUE NO:EXIT**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

To continue press the YES button.

If you do not want the previous test results erased press the NO button. Test will abort and test device will return to main menu.

If YES was pressed, the following screen will appear.

**WOULD YOU LIKE TO CHECK AND TEST A BRAKE  
CYLINDER GAUGE? (YES/NO)**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

If NO was pressed a Brake Cylinder Gauge Test will not be performed.

Select the appropriate option and the following screen will appear.

**CONNECT SUPPLY AIR TO TESTER**

**PRESS YES TO CONTINUE**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Connect Supply air and press YES to continue.

**OPEN ASCTD DRAIN COCK FOR 5 SECONDS**

**PRESS TO CONTINUE**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Open drain cock (located on the left side while facing the keyboard at the bottom of the test device, Gen II only) for five seconds to allow any moisture escape, close it, then press YES to continue.

The test device will now run through "Running System Check". If this test is successful, it will move to next test automatically. If test fails, the screen will show an error message. See troubleshooting at the end of this manual for corrections to error messages.

**Audible alarm test** will show the following.

**AUDIBLE ALARM TEST**

**DO YOU HEAR A BEEP (YES/NO)**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Press YES if audible alarm sounded, test will continue.

If the user presses NO the display will show an error message. The daily test will abort. Repairs must be made before test will continue.

The next test will check the interface pistons. The interface connector pistons are located under the connector cover. The operator must physically check the operation of the interface connector. Pistons must be observed as instructed during this test.

**— INTERFACE PISTON CHECK —**

**FLIP OPEN INTERFACE CONNECTOR**

**WARNING AVOID PINCH POINTS**

**YES:CONTINUE**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

After removing interface connector from holding area, pull back on the connector cover. Press YES button to continue.

The unit will prompt the operator to check for piston extension as indicated by the following screen.

**VISUALLY LOOK TO SEE THAT ALL 4**

**INTERFACE CONNECTOR PISTONS HAVE**

**EXTENDED FROM THE CONNECTOR FACE**

**YES:OK**

**NO:FAIL**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Look on the bottom of the interface connector to see if all four pistons have extended.

If pistons did not extend press NO button. Unit will not continue with the test. Repairs must be made. See troubleshooting guide at back of this manual.

If the pistons have extended press YES button to continue. Unit will test for piston retraction as indicated by the next screen.

**VISUALLY LOOK TO SEE THAT ALL 4**

**INTERFACE CONNECTOR PISTONS HAVE**

**RETRACTED INTO THE CONNECTOR FACE**

**YES:OK**

**NO:FAIL**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

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Responses to this screen are the same as for the previous screen.

Unit will require test plate connection. Attach blanking plate (found mounted on front housing of unit) to interface connector. When this is accomplished press YES to continue.

If you intend to perform any End of Car (EOC) tests before the next scheduled Daily Test, the EOC Test Connector and a dummy Glad-hand, must be substituted for the blanking plate.

### SECURELY INSTALL BLANKING PLATE

**YES:CONTINUE**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

**PRESS YES TO CONTINUE**

Unit will zero the transducers, to avoid false readings as noted by this screen.

### DRAINING TO ZERO TRANSDUCERS

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Unit will do a system leakage and valve tests (this will take several minutes). If there are leaks found in the system, the unit will display an error screen identifying the defect. Some leaks may be found and identified using soapsuds. Other leaks may require use of the troubleshooting guide. No input is required by the operator until the following screen appears for brake cylinder gauge check. If the brake cylinder gauge check is not required, the next screen that appears is the "Push Emergency Drain Button" screen.

### BRAKE CYLINDER GAUGE CHECK.

**PLUG IN THE QUICK DISCONNECT COUPLING**

**WITH BC GAUGE INTO THE TEST PRESSURE**

**TAP.**

**PRESS YES TO CONTINUE**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Plug Brake Cylinder Gauge into Brake Cylinder Pressure Tap located on the underside of the ASCTD Blanking Plate and press YES to continue.

The following screen is a reminder that the Brake Cylinder Gauge and test Coupling must be calibrated every 92 days.

### BRAKE CYLINDER GAUGE CHECK.

**NOTE: THE BRAKE CYLINDER GAUGE AND TEST COUPLING**

**MUST BE CALIBRATED EVERY 92 DAYS.**

**PRESS YES TO CONTINUE**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Press YES to continue and the following screen will appear.

### BRAKE CYLINDER GAUGE CHECK.

**CHARGE TO 80 PSI**

**THE BRAKE CYLINDER PRESSURE GAUGE MUST**

**READ BETWEEN 77 AND 83 PSI**

**PRESS ANY KEY TO CONTINUE**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Gauge must read between 77 and 83 psi, or it must be condemned as defective. If gauge reads 77 to 83 psi press any key (DO NOT PUSH QUIT) to continue and the following screen will appear.

**BC GAUGE LEAKAGE TEST**  
**CHARGING TO 90 PSI**  
**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

The ASCTD will automatically charge the Brake pipe/Brake Cylinder Gauge to 90 psi and perform a 1 minute leakage test. If unit fails leakage test the daily test error screen will be shown indicating failure (cause - leaking gauge, hose, or coupling). If unit passes the test, the following screen will appear.

**BC GAUGE LEAKAGE TEST.**  
**BC GAUGE LEAKAGE = \_\_\_ PSI**  
**BC GAUGE LEAKAGE TEST PASSED.**  
**PRESS ANY KEY TO CONTINUE**  
**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Press any key to continue.

The unit will charge for the emergency drain function. If an error occurs charging during this test an error screen will be shown. Refer to troubleshooting guide for corrections. Once charging is complete the unit will show following screen.

**PUSH EMERGENCY DRAIN BUTTON TO CHECK**  
**OPERATION**  
**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Push **Emergency Drain** button.

**EMERGENCY DRAIN DETECTED**  
**WAITING 60 SEC. TO DRAIN**  
**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

The ASCTD will automatically perform a 60 second emergency drain.

Once the Emergency Drain test has completed, the test device will display the following screen, indicating the daily test has passed.

**DAILY TEST PASSED**  
**PRESS ANY KEY TO CONTINUE**  
**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Press any key to continue.



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Pressing any key at this time will shut down the ASCTD. The result of the daily test will be saved. Any error code will be saved and the result written to the computer results file. The date of the last daily test will also be saved and returned to the computer results file. To restart the unit press the ON button.

### 12.4 SINGLE CAR TEST

#### **WARNINGS:**

Chock car wheels to restrict movement of the test car.

Warning placards (blue flag), indicating work is being performed, should be placed in accordance with railroad safety practices.


All workers and bystanders must be clear of car under test.

The ASCTD will sound an audible warning just before brake applications, except when using manual control for EOC Test Adapter in the Manual Operations Menu. Bystanders should be alerted accordingly to protect their ears.

**One beep:** Brake cylinder piston about to move and apply brakes.

**Two beeps:** Emergency application, expect a loud, sudden discharge of air.

Before performing any work on the car valves and/or any other air brake equipment, make sure all air is depleted from the system to minimize potential personal injury.

 **WARNING:** It is possible that the brakes may apply at any time without warning if there is air in the car or system. When inspecting or checking brake rigging or brake cylinder action, workers must be extremely careful to keep all body parts clear of any moveable components.

### PRE-TEST INSTRUCTIONS

The following inspections and services are to be performed in accordance with applicable AAR Interchange Rules.

When making tests of cars having two or more sets of brake equipment, each set, with the section of brake pipe it controls, must be tested separately. Refer to car maintenance instructions or car stenciling to determine where brake pipe should be separated for testing.

On cars having two sets of brake equipment controlling a common length of brake pipe, each set of equipment must be tested separately, with the branch pipe cut-out cock closed to one set while the other set is being tested.

**NOTE:** The Automated Single Car Test Device is programmed to test cars equipped with AAR approved Control Valve portions. It is NOT designed for use on AB Control Valves.

**NOTE:** Empty cars equipped with empty/load equipment must be tested in the loaded condition for all tests except where noted in this section. Cars with empty/load devices that automatically reset to empty position must be manually reset to loaded condition for each test unless otherwise indicated.

**12.4.1 TEST DEVICE OPERATIONS**

**Important:** A System Fault occurs when the ASCTD is unable to conduct the test correctly. The cause may be in the supply air, the car, or the ASCTD. The ASCTD will provide information to help the operator locate and correct faults.

A Test Failure occurs when a properly conducted test fails. The cause is usually on the car and diagnostics are available to assist in pinpointing the failure.

It is extremely important to follow the instructions at the time they are given. Failure to respond will result in improper or delayed testing. If possible make the necessary repairs or contact your Wabtec Corporation Field Engineering Representative.

The Single Car Tests are performed in the following steps requiring the same starting point. Turn on the unit and it will cycle to the screen shown below.

**IS DATE AND TIME CORRECT?**

DAY      MONTH      TIME      YEAR  
 PRESS YES: OK    NO: CHANGE  
 1 ENGLISH    2 ESPANOL    3 FRANCAIS  
 S=\_\_\_    BP=\_\_\_    A=\_\_\_    E=\_\_\_    BC=\_\_\_

If the correct time and date are shown the operator should press the YES button and test device will move to the **MAIN MENU** screen.

Use the number keys to select the type of test the operator wishes to perform.

**MAIN MENU**      hh:mm:ss  
 1 - SGL. CAR TEST      4 - DAILY TEST  
 2 - RESERVED      5 - UTILITIES  
 3 - SPECIAL TESTS      6 - VENT SYSTEM  
 S=\_\_\_    BP=\_\_\_    A=\_\_\_    E=\_\_\_    BC=\_\_\_

Press number 1 to start Single Car Test, and the following screen will appear.

**SINGLE CAR TEST MENU**      hh:mm:ss  
 1 - ACCESS PLATE/ SSPB WITH RECEIVER  
 2 - END OF CAR  
 S=\_\_\_BP=\_\_\_    A=\_\_\_    E=\_\_\_    BC=\_\_\_

At this point the operator may choose which version of the Single Car Test they would like to run. The following instructions will cover both options through performance of the General Inspection.

Operation of the ASCTD in ACCESS Plate/SSPB with Receiver mode, requires a receiver mounted on the pipe bracket or an access plate with the receiver located between the service portion and the standard AB pipe bracket. The interface connector of the Automated Single Car Test Device mounts to the receiver. The interface connector will connect to either of the following:

**Single Sided Pipe Bracket** - This arrangement is furnished with the receiver mounted directly to the pipe bracket (Wabtec SSPB only).

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**Access Plate** - This arrangement is mounted between the service portion and the pipe bracket. There are three styles to choose from (Front Access, Top Access, Bottom Access). If the Access Plate needs to be installed, refer to WABCO Kit Bulletin 6225-1, Installation Procedure for Access Plate Kits).

Operation in **End of Car** mode tests through the End Of Car test connector and requires no additional equipment.

Select desired test version now to move to the following screen

### TESTING REQUIRES A PASSWORD

TYPE PASSWORD: \_\_\_\_\_

PRESS ENTER/YES: END BS: DEL

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Once the operator has keyed in the desired characters (password) press ENTER or YES to continue and the next screen will ask for initials.

TYPE OPERATOR INITIALS: \_\_\_\_\_

PRESS ENTER: END BS: DEL

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Enter operator initials and press ENTER or YES to continue to the next screen.

1 - CAR NUMBER:

2 - CAR STAMP NUMBER:

3 - CAR LOT NUMBER:

PRESS 1-3: EDIT YES: CONTINUE NO: EXIT

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

For areas 1 - 3, information must be entered. Only one field must have information entered. Select the desired number of the field(s) to enter car information.

### USE NUMBERS OR LETTERS

CAR NUMBER: \_\_\_\_\_

PRESS ENTER/YES: END BS: DEL

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

To enter the **car number**, the unit will accept alpha characters followed by numeric digits to 16 characters.  
 i.e. WABX123456 A (Intermodal car - platform being tested)

To enter the **car stamp number**, the unit will accept a maximum of 2 letters and 4 digits.

To enter the **car lot number**, the unit will accept a maximum of 4 digits.

(Example)

### USE NUMBERS OR LETTERS

CAR NUMBER: WABX123456 A

PRESS ENTER/YES: END BS: DEL

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_



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After entering information in at least one of the fields indicated and pressing ENTER, the unit will show the following screen.

(Example)

1 - CAR NUMBER: WABX123456 A  
2 - CAR STAMP NUMBER:  
3 - CAR LOT NUMBER:  
PRESS 1-3: EDIT YES: CONTINUE NO: EXIT  
S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

This screen gives you the option to confirm or edit the car information. Press 1-3 to edit or YES to continue.

**TYPE APPROXIMATE BRAKE PIPE LENGTH  
TO NEAREST FOOT:**  
PRESS YES: CONTINUE NO: ABORT  
S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Brake pipe length does not have to be exact. If the car is equipped with auxiliary brake pipe reduction devices, brake pipe length must be shown as over 75 feet.

**NOTE:** If brake pipe length is unknown add 8 feet to the actual car length for cars having conventional end hose arrangements or end hose arrangements similar to that depicted in AAR Standard S-4003. Add 20 feet to the actual car length for cars having end hose arrangements similar to that depicted in AAR Alternate Standard S-4003. Valid testing can only occur on cars with up to 150 feet of brake pipe.

Enter brake pipe length and press YES button to continue.

Unit will require certain information to ensure it performs the proper tests.

**OPTIONS: 1-3 TGLE YES: END !: PG1**  
1 - IS EMERGENCY PORTION AN ABD/ABDS N  
2 - VENT VALVE N  
3 - B-1 VALVE N  
S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Use buttons 1-3 to toggle between YES (Y) and NO (N). All answers have NO as the default when the ASCTD is turned on. If the ASCTD is not turned off, the answers to the previous test become the new defaults.

#1- ABD and ABDS emergency portions do not have an AAV function and therefore this function will not be tested. All other emergency portions have an AAV function and will be tested.

#2 - If the car is equipped with a separate vent valve, change default to Y (YES).

#3 - If the car is equipped with a B-1 quick service valve, change the default to Y (YES).

After answering questions 1- 3, press YES to continue.

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**OPTIONS: 1-3: TGLE YES:END !:PG 2**

**1- AUTOMATIC SLACK ADJUSTER(S) N**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Use button 1 to toggle between YES (Y) and NO (N). All answers have NO as the default. Once question has been answered press YES to continue.

If the operator indicated the car was over 75 feet and no vent valve, the unit will show a message requiring confirmation or corrections by the operator.

**WARNING:** The test device will display a warning screen to protect the operator and anyone in the immediate vicinity of the car under test.

**WARNING! CHOCK THE CAR WHEELS TO  
PREVENT MOVEMENT AND COMPLETELY  
DRAIN CAR WITH MANUAL RELEASE ROD  
PRESS YES: CONTINUE**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

In accordance with AAR Standard S-486, the ASCTD will provide a prompt to reference the application of a brake cylinder measurement tap.

**PRESS YES.**

**CAR MAY REQUIRE APPLICATION OF BRAKE  
CYLINDER PRESSURE MEASUREMENT TAP  
REFER TO CURRENT AAR SPECIFICATIONS  
FOR REQUIREMENTS. YES: CONTINUE**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Press YES to continue.

**OPTIONS: 1-3: TGLE YES: END ! PG 1**

**1- CAR EQUIPPED E/L DEVICE Y**

**2- CAR EMPTY Y**

**3- CAR EQUIPPED WITH BC PRESSURE TAP Y**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Use buttons 1-3 to toggle between YES (Y) and NO (N). All answers have YES as the default when the ASCTD is turned on. If the ASCTD is not turned off, the answers to the previous test become the new defaults.

After answering questions 1- 3, press YES to continue.

**OPTIONS: 1-3: TGLE YES: END ! PG 2**

**1- BC PRESSURE TAP DOWNSTREAM OF E/L Y**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

Use buttons 1 to toggle between YES (Y) and NO (N). All answers have YES as the default when the ASCTD is turned on. If the ASCTD is not turned off, the answers to the previous test become the new defaults.



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After answering questions 1, press YES to continue.

The following screen appears if you selected Yes for car equipped E/L Device.

**IS THE EMPTY/LOAD DEVICE AN ELX-S SLOPE  
SHEET MOUNTED VALVE? (YES/NO)**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

After selecting the appropriate answer the next screen will appear.

**HAS THE GENERAL INSPECTION BEEN  
SUCCESSFULLY COMPLETED ALREADY?**

**(YES/NO)**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

If the General Inspection has already been successfully completed you may press YES to continue.

**NOTE:** If the general inspection has not been completed, the operator will press the NO button. The unit will instruct the operator to check all items listed in the preliminary procedures of AAR Standard S-486.

**NOTE:** At this point the two Single Car Test versions (Access/Receiver - EOC) are different. The operator **MUST** follow the on screen prompts, performing the actions and entering the information requested by the ASCTD. If the actions are not performed, or the information not entered, correctly, the test is defective and may result in a failure automatically ending the test.

### 12.5 SPECIAL TESTS

This section covers tests available for the operator for special situations. Tests covered here are:

1. 10 MINUTE BC LEAKAGE TEST
2. ALTERNATE FOUR - HOUR TEST
3. Manual Operations

To access these tests the operator must select 3 - Special Tests from the MAIN MENU, as shown below.

MAIN MENU		hh:mm:ss
1 - SINGLE CAR TEST	4 - DAILY TEST	
2 - RESERVED	5 - UTILITIES	
3 - SPECIAL TESTS	6 - VENT SYSTEM	
S=___ BP=___ A=___ E=___ BC=___		

To access the special menu the test device will require a password be entered by the operator.

**TESTING REQUIRES A PASSWORD**

**TYPE PASSWORD: \_\_\_\_\_**

**PRESS ENTER/YES: END B.S.: DEL**

**S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_**

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**NOTE:** B.S.: DEL = Press backspace to delete. Press ENTER/YES after entering a password, the test device will then move to the special tests menu screen.

### SPECIAL TESTS MENU

- 1 – 10 MINUTE LEAKAGE TEST
- 2 – ALTERNATE FOUR – HOUR TEST
- 3- MANUAL OPERATIONS

NO: EXIT

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

#### 1. 10 MINUTE BC LEAKAGE TEST

Selecting this option will perform the 10 Minute BC Leakage Test as described in AAR S-401. 22.1 Brake Cylinder Leakage Method.

#### 2. ALTERNATE FOUR – HOUR TEST

Selecting this option will perform the Alternate 4-Hour Test as described in AAR S-401 22.2 Alternate 4-Hour Test Method.

#### 3. MANUAL OPERATIONS

Selecting this option will take you to the Manual Operations screen.

### MANUAL OP SELECTION MENU hh:mm:ss

- 1. – MANUAL CONTROL ACCESS PORTS
  - 2. – MANUAL CONTROL GLAD HAND ADAPTER
- NO: EXIT

#### a. USING OPTION 1 - MANUAL CONTROL ACCESS PORTS

Select option 1 if you are using the ACCESS PLATE/ SSPB WITH RECEIVER.

**MAKE SURE BRANCH PIPE CUT-OUT COCK  
IS OPEN AND BOTH ANGLE COCKS ARE CLOSED  
YES:CONTINUE**

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**INSTALL INTERFACE CONNECTOR TO RECEIVER  
AND SUPPLY AIR TO TEST DEVICE IF NOT  
ALREADY DONE  
YES: TO CONTINUE**

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### MANUAL OPERATIONS MENU

NO: EXIT

- |                  |              |             |
|------------------|--------------|-------------|
| 1- CONTROL BP    | 4- EMERGENCY | 7. BC PSI   |
| 2- 20 PSI REDUCT | 5- CHARGE BP | 8. S/A      |
| 3- FULL SERVICE  | 6- MIN APP   | 9. RETAINER |

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**CAUTION:** Selecting 2, 3, 4, 6, 7, 8 and 9 will automatically cause the test device to make a brake application. All safety precautions must be adhered to at this time.

### 1. Control Brake Pipe Pressure

Press 1 in Manual Operations Menu. The operator can control the brake pipe pressure in this sequence of screens.

The test device will show pressures in the following areas: the brake pipe (BP), auxiliary reservoir (AX), emergency reservoir (EM), and brake cylinder (BC). These values will change as the pressure in the car brake system changes.

#### CHARGING UP SYSTEM

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

NO: EXIT

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

< : DROP BP >: CHARGE BP NO: EXIT

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Use left arrow button to start and stop the brake pipe reduction. Use the right arrow button to charge the brake pipe.

### 2. 20 psi Reduction

To initiate a 20 psi reduction in brake pipe, press 2 in Manual Operations Menu.

Test device will charge areas indicated. Values of the brake pipe (BP), auxiliary reservoir (AX), emergency reservoir (EM), and brake cylinder (BC) will change as the pressure increases. Once the system is charged a brake application will be made and the values will change.

#### 20 PSI REDUCTION

FROM 90 PSI CHARGE PRESS '9'

FROM 70 PSI CHARGE PRESS '7'

ENTER THE OPTION: \_\_\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

After selecting the desired option ("7" or "9") the unit will automatically charge the car and make a 20 psi reduction.

### 3. Full Service Application

To initiate a full service brake application, press 3 in Manual Operations Menu.

Test device will charge brake system as indicated. Values of the brake pipe (BP), auxiliary reservoir (AX), emergency reservoir (EM), and brake cylinder (BC) will change as the pressure increases. Once the system is charged a brake application will be made and the values will change.

#### FULL SERVICE APPLICATION

FROM 90 PSI CHARGE PRESS '9'

FROM 70 PSI CHARGE PRESS '7'

ENTER THE OPTION: \_\_\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_



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After selecting the desired option ("7" or "9") the unit will automatically charge the car and make a **FULL SERVICE APPLICATION**.

### 4. Emergency Application

To initiate an emergency brake application, press 4 in Manual Operations Menu.

Test device will charge brake system as indicated. Values of the brake pipe (BP), auxiliary reservoir (AX), emergency reservoir (EM), and brake cylinder (BC) will change as the pressure increases. Once the system is charged a brake application will be made and the values will change.

#### EMERGENCY APPLICATION

FROM 90 PSI CHARGE PRESS '9'

FROM 70 PSI CHARGE PRESS '7'

ENTER THE OPTION: \_\_\_\_

S=\_\_\_\_ BP=\_\_\_\_ A=\_\_\_\_ E=\_\_\_\_ BC=\_\_\_\_

After selecting the desired option ("7" or "9") the unit will automatically charge the car and make an **EMERGENCY APPLICATION**.

### 5. Charging the Brake Pipe

To charge the brake pipe, press 5 in the Manual Operations Menu. Using this manual function, the operator can observe the flow rating of the brake pipe to check leakage without performing a full air brake test.

Test device will charge brake system as indicated. Values of the brake pipe (BP), auxiliary reservoir (AX), emergency reservoir (EM), and brake cylinder (BC) will change as the pressure increases.

#### CHARGING UP SYSTEM

##### CHARGING B P

BP:\_\_\_\_ AX:\_\_\_\_ EM:\_\_\_\_ BC:\_\_\_\_

S=\_\_\_\_ BP=\_\_\_\_ A=\_\_\_\_ E=\_\_\_\_ BC=\_\_\_\_

Note change in the flow rate as the brake pipe charges.

FLOW: \_\_\_\_

BP:\_\_\_\_ AX:\_\_\_\_ EM:\_\_\_\_ BC:\_\_\_\_

PRESS (YES) TO RETURN TO MANUAL MENU

S=\_\_\_\_ BP=\_\_\_\_ A=\_\_\_\_ E=\_\_\_\_ BC=\_\_\_\_

**6. Minimum Application**

To initiate a minimum (6 psi drop) brake application, press 6 in Manual Operations Menu.

Test device will charge brake system as indicated. Values of the brake pipe (BP), auxiliary reservoir (AX), emergency reservoir (EM), and brake cylinder (BC) will change as the pressure increases. Once the system is charged a brake application will be made and the values will change again. Once the Minimum Application is complete the values will appear in the screen below.

**MINIMUM APPLICATION**

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

**PRESS (YES) TO RETURN TO MANUAL MENU**

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**7. Brake Cylinder Control**

To control the amount of brake cylinder pressure, press 7 in Manual Operations Menu.

Test device will charge brake system as indicated. Values of the brake pipe (BP), auxiliary reservoir (AX), emergency reservoir (EM), and brake cylinder (BC) will change as the pressure increases.

**CHARGING UP SYSTEM**

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**CONTROL BC NO: EXIT**

**NEW DESIRED PRESSURE: \_\_\_\_\_**

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

**YES: CONTINUE**

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

The operator must enter the pressure desired in the space provided and press YES to continue. Brakes will apply and brake cylinder pressure will change and be indicated below. Press NO to exit this operation.

**CONTROL BC NO: EXIT**

**NEW DESIRED BC PRESSURE: \_\_\_\_\_**

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

**CURRENT DESIRED BC PRESSURE: \_\_\_\_\_**

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**8. Slack Adjuster Test**

To test the operation of an automatic slack adjuster, press 8 in the Manual Operations Menu. The test device will test the automatic slack adjuster with input from the operator.

**SETTING UP FOR SLACK ADJUSTER TEST**

**PLEASE WAIT**

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

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### CHARGING SYSTEM

#### DROPPING B P

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### CHARGING SYSTEM

#### CHARGE B P

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### SETTING UP FOR PISTON TRAVEL CHECK

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

#### CHECK PISTON TRAVEL NOW

PRESS YES WHEN DONE NO: EXIT

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### IS THE PISTON TRAVEL WITHIN LIMITS FOR THIS CAR?

PRESS YES TO CONTINUE NO: EXIT

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### DRAINING BP

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### PULL MANUAL RELEASE ROD FOR 3 SECONDS

#### DID CYLINDER FULLY RETRACT? (YES/NO)

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Operator must pull brake cylinder release rod and hold for 3 seconds. Answer this screen by pressing YES or NO as applicable. In accordance with AAR S-486-99, the removal of brake shoes instead of inserting blocks between the shoe and a wheel is a suitable alternative.

**⚠ WARNING:** Make sure no air is present in brake cylinder (s) to prevent personal injury while performing the following task.

### INSERT BLOCKS BETWEEN BRAKE SHOE AND

#### WHEEL ON ONE END OF SINGLE SLACK

#### ADJUSTER OR BOTH ENDS IF MULTIPLE

#### SLACK ADJUSTERS. YES: WHEN DONE

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### CHARGING UP SYSTEM

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### CHARGING UP SYSTEM

#### CHARGING BP

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Automated test device will cycle the brake system to activate the automatic slack adjuster. Note as brakes will apply all safety procedures must be observed.

**CYCLING BC**

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**SETTING UP FOR PISTON TRAVEL**

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**CHECK PISTON TRAVEL NOW****PRESS YES WHEN DONE NO: EXIT**

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**IS PISTON TRAVEL NOMINALLY THE SAME  
AS PREVIOUSLY NOTED?**

**PRESS YES: CONTINUE NO: EXIT**

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**DRAINING BP**

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**PULL MANUAL RELEASE ROD FOR 3 SECONDS****DID CYLINDER FULLY RETRACT? (YES/NO)**

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Operator must pull brake cylinder release rod and hold for 3 seconds. Answer this screen by pressing YES or NO as applicable. Reinsert brake shoe(s) if removed for this test.

**REMOVE BLOCK(S) FROM BETWEEN SHOE(S)  
AND WHEELS YES: WHEN DONE**

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**CHARGING UP SYSTEM**


BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

**CHARGING UP SYSTEM****CHARGE BP**

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

 Automated test device will cycle the brake system to activate the automatic slack adjuster. Note as brakes will apply, all safety procedures must be observed.

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### CYCLING BC

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### SETTING UP FOR PISTON TRAVEL

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### CHECK PISTON TRAVEL NOW

PRESS YES WHEN DONE NO: EXIT

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### IS PISTON TRAVEL NOMINALLY THE SAME AS PREVIOUSLY NOTED?

PRESS YES: CONTINUE NO: EXIT

S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

## 9. Retainer Test

To test the retainer valve function or to test a newly applied retainer valve, press 9 in the Manual Operations Menu. Test device will test the retainer valve by instructing the operator through on screen prompts through completion of the test sequence.

### RETAINER TEST PASSED

PRESS YES TO CONTINUE

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

## Vent System

To vent the brake system, exit the manual operation. The test device will show the following screens requiring input by the operator.

### READY TO VENT SYSTEM

VENT? YES/NO

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Press YES to continue.

### PLEASE WAIT

BP:\_\_\_ AX:\_\_\_ EM:\_\_\_ BC:\_\_\_  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

### SYSTEM VENT UTILITY

WHEN SYSTEM IS VENTED YES: CONTINUE

BP: AX: EM: BC:  
 S=\_\_\_ BP=\_\_\_ A=\_\_\_ E=\_\_\_ BC=\_\_\_

Press YES to continue.

**b. USING OPTION 2 - MANUAL CONTROL GLAD HAND ADAPTER**

Select option 2 if you are using the GLAD ADAPTER and the following screen will appear.

**CONNECT INTERFACE CONNECTOR AND GLAD  
HAND ADAPTER TO BRAKE PIPE HOSE.  
CONNECT BRAKE CYL HOSE FROM BRAKE CYL  
READ DEVICE TO THE ADAPTER.  
PRESS YES TO CONTINUE  
S=\_\_ BP=\_\_ BC=\_\_**

Follow the on screen prompts and press YES to continue on to the next screen.

**MANUAL CONTROL FOR END OF HOSE ADAPTER**  
**1 – CHARGE                      4 – SLOW REDUCTION E - EMERG**  
**2 – SLOW CHR G    5 – SHORT STABILITY F – FLOW**  
**3 – LAP                      6 – LONG STABILITY    NO – EXIT**  
**S=\_\_ BP=\_\_ BC=\_\_**

This screen replicates the Manual Single Car Test Device.

Each corresponding number representing positions of the rotary valve handle:

**Position 1** - Quick charge of car brake system

**Position 2** - Slow charge of car brake system

**Position 3** - LAP (No air movement)

**Position 4** - Slow reduction of brake pipe pressure to provide application of car brakes under control

**Position 5** - Service Stability (Short Car) – Rapid reduction of brake pipe air to test valve stability on short cars.

**Position 6** - Service Stability (Long Car) – Rapid reduction of brake pipe air to test valve stability on long cars.

And the letters “**E**” representing **3/8" cock** to test emergency valve function, “**F**” representing the **Flowrator** which is used to determine system leakage and comparing brake cylinder leakage.

## ASCTD User's & Set-up Manual

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### TROUBLE SHOOTING GUIDE

PROBLEM	SOLUTION
ASCTD will not power on.	(1) Check if AC is connected. (2) Battery switch is turned to "ON".
Single Car Test fails leakage test, no leaks found on the car.	(1) Check that the Interface Connector is securely fastened to the car.
Interface Connector Pistons fail to operate within 5 second period during Daily Test.	(1) Supply pressure low. (2) C-1 line is broken or leaking.
Daily Test fails for leakage.	(1) Check for leakage at Interface Connector and hoses. (2) Check for internal leakage with snoop. (3) Gaskets maybe bad on the test plate.
Release Valve inside ASCTD is blowing air.	(1) Supply pressure maybe too high (above 140 psi).

**CALIBRATION SPECIFICATION****T-310251-O****AUTOMATED SINGLE CAR TEST DEVICE**Revision:      **F**      **July 15, 2004****REQUIREMENTS:****a. Calibration Kit, Part No. 310251****b. Temperature:**

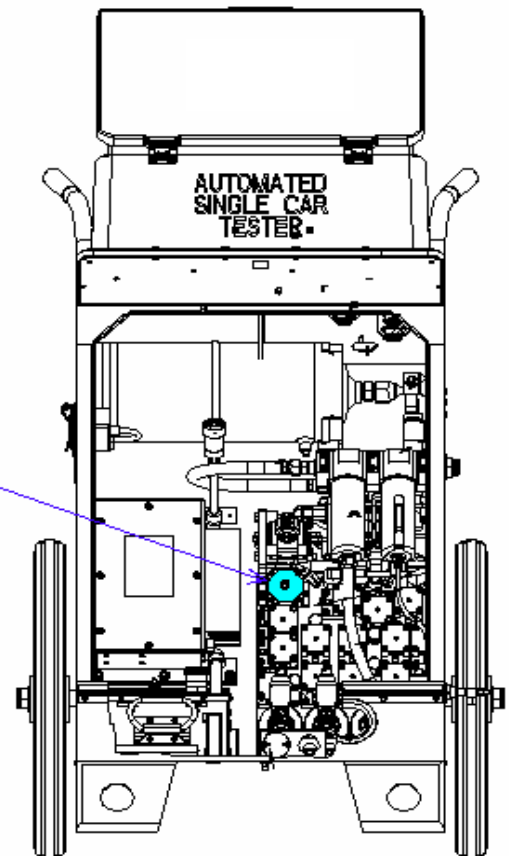
To properly complete this specification, the **ambient temperature should be within 60 to 80° F (15 to 26° C)**. Prior to performing this specification, please ensure the ASCTD adequate time to reach proper ambient temperature. If the temperature is out of this range, you may proceed with calibration, only if the unit is to be used at the calibrated temperature. If the ambient operating temperature changes drastically, the unit may have to be recalibrated at the new ambient temperature.

**c.  Safety Procedures and Warnings:**

1. General shop safety procedures must be followed at all times.
2. Eye and ear protection must be worn while performing this specification.
3. **Warnings:** Ensure connections are tight. When required to loosen connections, loosen them slowly to ensure air has been depleted.

**d. Important:**

Wabtec Corporation may revise this document at any time. It is the responsibility of the user of this product to ensure the latest issue of this specification is being used. Also, the Calibration Kit must be in calibration when performing ASCTD calibration. Do not deviate from this specification.

Regulator



## ASCTD User's & Set-up Manual

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### 1.0 Pressure Calibration (XDCRS)

**NOTE:** Ensure the ASCTD has passed the daily test. Run the daily test if necessary; the Calibration Kit test plate can be used for the daily test.

1. Turn on the Digital Pressure Gauge (HEISE); let it warm up for 10 minutes.
2. Once warmed up, zero the HEISE by depressing and holding the zero button until the display reads **+/- 0.00** psi.
3. Turn on the ASCTD, connect air, and plug unit in if necessary.
4. From **MAIN MENU** select option **[5-UTILITIES]**.
5. From **UTILITIES MENU** select option **[1-CALIBRATION]**.
6. Type password and press ENTER.
7. From **CALIBRATION UTILITY** select option **[1-SENSOR CALIBRATION]**.
8. From **SENSOR CALIBRATION UTILITY** select option **[1-CALIBRATE]**.
9. From **SELECT SENSORS TO CALIBRATE** select option **[1-XDCRS]**.

#### TRANSDUCER CALIBRATION

**THE AMBIENT TEMPERATURE MUST BE WITHIN 60 TO 80 °F (15 TO 26 °C).**

**PRESS YES TO CONTINUE**

10. Press YES.

#### TRANSDUCER CALIBRATION

**SECURELY INSTALL BLANKING PLATE TO INTERFACE CONNECTOR**

**PRESS YES TO CONTINUE**

11. Install the calibration test plate and connect the HEISE to the hose and the hose to the plate. Press YES.

**MUST USE TWO CALIBRATION POINTS WITH ONE AT ZERO PSI AND**

**THE OTHER APPROX. 90 PSI**

**PRESS YES TO CONTINUE**

12. Press YES.

#### TRANSDUCER CALIBRATION

**MASTER: \_\_\_\_\_ CAL POINT: 1      MAX: 2**

**ENTER MASTER VALUE IN PSI**

**PRESS YES: CONTINUE**

**NO: REPEAT**



13. Master (HEISE) should read nominally 0.00 PSI. Enter **0.00** and press YES to continue.

**TRANSDUCER CALIBRATION**

**MASTER: 0.00    CAL POINT: 1    MAX: 2**

**VOLTS: BP 0.0    AX 0.0    EM 0.0    BC 0.0    [GEN I VALUES]**

**VOLTS: BP -5.0    AX -5.0    EM -5.0    BC -5.0    [GEN II VALUES]**

**YES: ACCEPT VALUES    NO: REPEAT    QUIT: ABORT**

14. Prior to pressing YES, record the values (MASTER & XDCRS) on the ASCTD Pressure Calibration Fill In Sheet. The values for GEN I and GEN II will be different. Nominal examples are provided for each.

15. Press YES. ASCTD will automatically charge itself.

**TRANSDUCER CALIBRATION**

**ADJUST REGULATOR NOW IF NECESSARY**

**MASTER MUST BE 90.5 TO 91 PSI**

**PRESS YES TO CONTINUE**

**NOTE:** COMPLETE STEP 17 AND REVIEW STEP 18 PRIOR TO PRESSING YES.

17. With a soapy mixture check all connections from the HEISE (do not get the HEISE wet) to the interface connector. No leakage allowed in 30 seconds.

18. The pressure displayed on the MASTER (HEISE) is the regulator setting. Should the regulator require adjustment, the front cover can now be removed without tripping the door switch safety feature. Please refer to the diagram on page 60 for the location of the regulator. Loosen the jam nut and turn the regulator shaft clockwise to increase the pressure or counterclockwise to decrease the pressure. Adjust the regulator until the HEISE reads **90.5 to 91.0**.

Tighten the jam nut ensuring the HEISE reading stays 90.5 to 91.0; ensure ground wire is reconnected and replace front cover.

19. Press YES.

**TRANSDUCER CALIBRATION**

**MASTER: \_\_\_\_\_    CAL POINT: 2    MAX: 2**

**ENTER MASTER VALUE IN PSI**

**PRESS YES: CONTINUE    NO: REPEAT**

20. Master (HEISE) should read 90.5 to 91.0. Enter value to nearest tenth **90.7** (example) and press YES to continue.

**TRANSDUCER CALIBRATION**

**MASTER: 90.7    CAL POINT: 2    MAX: 2**

**VOLTS: BP 9.09    AX 9.07    EM 9.09    BC 9.08    [GEN I VALUES]**

**VOLTS: BP 4.10    AX 4.09    EM 4.11    BC 4.10    [GEN II VALUES]**

**YES: ACCEPT VALUES    NO: REPEAT    QUIT: ABORT**

## ***ASCTD User's & Set-up Manual***

21. Prior to pressing YES, record the values (MASTER and XDCRS) on the ASCTD Pressure Calibration Fill In Sheet. The values for the GEN I and GEN II will be different. Nominal examples are provided for each.

22. Press YES.

**TRANSDUCER CALIBRATION  
CALIBRATION POINTS ARE READY  
PRESS YES TO CONTINUE**

23. Press YES.

**SYSTEM VENT UTILITY**-System vents and automatically proceeds to the next screen. This message flashes very quickly.

24. From **SENSOR CALIBRATION UTILITY** select **YES: SAVE**.

**SAVING CALIBRATION**. Calibration is saved. This message flashes very quickly.

### **VERIFICATION OF CALIBRATION (XDCRS)**

25. From **CALIBRATION UTILITY** select option **[1-SENSOR CALIBRATION]**.

26. Type password and press ENTER.

27. From **SENSOR CALIBRATION UTILITY** select option **[2-MONITOR]**.

28. From **SELECT SENSORS TO MONITOR** select option **[1-XDCRS]**.

**TRANSDUCER MONITOR:  
SECURELY INSTALL BLANKING PLATE TO INTERFACE CONNECTOR  
PRESS YES TO CONTINUE**

29. Press YES.

<b>TRANSDUCER MONITOR:</b>	<b>5: ADJUST</b>	<b>NO: EXIT</b>	
<b>VOLTS PSI</b>	<b>VOLTS PSI</b>		
<b>BP: 0.544</b>	<b>5.49</b>	<b>AX: 0.534</b>	<b>5.50 [GEN I]</b>
<b>-4.028</b>	<b>5.49</b>	<b>-4.032</b>	<b>5.50 [GEN II]</b>
<b>EM: 0.551</b>	<b>5.49</b>	<b>BC: 0.401</b>	<b>0.40 [GEN I]</b>
<b>-4.489</b>	<b>5.50</b>	<b>-4.053</b>	<b>0.40 [GEN II]</b>

30. Press 5 to adjust.

<b>ADJUST PRESSURE:</b>	<b>YES: CONTINUE</b>
<b>PSI BP=5.51</b>	<b>BC=0.45</b>
<b>CHARGE:</b>	<b>0-P1 CLOSED 9-BCC CLOSED</b>
<b>EXHAUST:</b>	<b>1-E2 CLOSED 2-BCE CLOSED</b>

31. Press 0 then 9. The system will charge up; please allow it to stabilize for 30 seconds at approx. 90 psi.

32. Press YES to continue.

**TRANSDUCER MONITOR: 5: ADJUST****VOLTS PSI**

BP: 9.092      90.71  
          4.028      90.72  
 EM: 9.095      90.73  
          4.053      90.72

**NO: EXIT****VOLTS PSI**

AX: 9.078      90.73 [GEN I]  
          4.032      90.71 [GEN II]  
 BC: 9.082      90.72 [GEN I]  
          4.053      90.72 [GEN II]

33. Record the values (MASTER and XDCRS) on the ASCTD Pressure Calibration Fill In Sheet. The values for GEN I and GEN II differ. Nominal examples are provided for each. **XDCRS MUST BE +/- 0.5 OF HEISE. THE MASTER (HEISE) SHOULD BE 90.5 TO 91.0**

**IF VALUES ARE OFF, PRESS NO TO EXIT AND REPEAT CALIBRATION PROCEDURE FROM STEP 1.**

34. Press 5 to adjust.

**ADJUST PRESSURE:****PSI    BP=90.71****CHARGE:      0-P1 CLOSED****EXHAUST:      1-E2 CLOSED****YES: CONTINUE****BC=90.7****9-BCC CLOSED****2-BCE CLOSED**

35. Press 1 then 2. The system will drain, please allow it to stabilize for 30 seconds at approx. 0.0 psi.

36. Press YES.

**TRANSDUCER MONITOR: 5: ADJUST****VOLTS PSI**

BP: 0.008      -0.01  
          -5.032      0.00  
 EM: -0.002      -0.01  
          -5.006      0.00

**NO: EXIT****VOLTS PSI**

AX: -0.018      -0.01 [GEN I]  
          -4.995      0.02 [GEN II]  
 BC: -0.007      0.00 [GEN I]  
          -5.022      -0.01 [GEN II]

37. Record the values (MASTER AND XDCRS) on the ASCTD Pressure Calibration Fill In Sheet. The values for GEN I and GEN II differ. Nominal examples are provided for each. **XDCRS MUST BE +/- 0.5 OF HEISE. THE MASTER (HEISE) SHOULD BE NOMINALLY 0.00**

**IF VALUES ARE OFF, PRESS NO TO EXIT AND REPEAT CALIBRATION PROCEDURE FROM STEP 1.**

38. Press NO to exit.

**SYSTEM VENT UTILITY.** System vents and automatically proceeds to the next screen. This message flashes very quickly.

39. From **SENSOR CALIBRATION UTILITY** select **NO: EXIT**.

40. From **CALIBRATION UTILITY** select **NO: EXIT**.

## ASCTD User's & Set-up Manual

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41. From **UTILITIES MENU** select **NO: EXIT**. ASCTD will go to **MAIN MENU**.

42. Disconnect the HEISE pressure gauge. Leave the calibration test plate and hose connected. Turn off HEISE and return it to the Calibration Kit. Proceed to Flow Calibration.

### 2.0 FLOW CALIBRATION

1. Connect the Flow Meter to the hose assembly and calibration test plate; open the needle valve. The plate should already be installed from the Pressure Calibration procedure; if not, please install the calibration test plate at this time.

2. Keep the Flow Meter within 15° vertical throughout this procedure. **Flow Meter readings are taken at eye level using the middle of the ball.**

3. From **MAIN MENU** select option **[6-VENT SYSTEM]**.

**READY TO VENT SYSTEM**  
**DO YOU WISH TO VENT THE SYSTEM (YES\NO)**

4. Press YES to vent system.

**SYSTEM VENT UTILITY**  
**WHEN SYSTEM IS COMPLETELY VENTED HIT YES**  
**BP: -0.0 AX: -0.0 EM: 0.0 BC: 0.0**

5. Press YES. ASCTD will go to MAIN MENU. Close the needle valve on the Flow Meter, do not overtighten.

6. From **MAIN MENU** select option **[5-UTILITIES]**.

7. From **UTILITIES MENU** select option **[1-CALIBRATION]**.

8. Type password and press ENTER.

9. From **CALIBRATION UTILITY** select option **[1-SENSOR CALIBRATION]**.

10. From **SENSOR CALIBRATION UTILITY** select option **[1-CALIBRATE]**.

11. From **SELECT SENSORS TO CALIBRATE** select option **[2-FLOW]**.

#### FLOWMETER CALIBRATION

**THE AMBIENT TEMPERATURE MUST BE WITHIN 60 TO 80 °F (15 TO 26 °C).**

**PRESS YES TO CONTINUE**

12. Press YES.

**FLOWMETER CALIBRATION**  
**SECURELY INSTALL BLANKING PLATE WITH MASTER FLOWMETER.**  
**CLOSE NEEDLE VALVE.**  
**PRESS YES TO CONTINUE**

13. Press YES.

ASCTD will automatically perform a 90-second stabilization prior to showing the next screen. While waiting, with a soapy mixture check all connections from the FLOW METER to the Interface Connector. No leakage allowed in 30 seconds.

**FLOWMETER CALIBRATION**
**MASTER: 0.00      CAL POINT: 1      MAX: 12**
**SET FLOW METER TO 0 CIM**
**PRESS YES TO CONTINUE**

14. After the flow meter has been set to zero, by closing the needle valve, press YES to continue.

**FLOWMETER CALIBRATION**
**MASTER: 0.00      CAL POINT: 1      MAX: 12**
**VOLTS: -X.XX**
**YES: ACCEPT VALUES      NO: REPEAT      QUIT: ABORT**

15. Prior to pressing YES, record the voltage value reading in the CALIBRATION column of the ASCTD Flow Calibration Fill In Sheet for the first CAL POINT (0CIM). Press YES to accept values.

**FLOWMETER CALIBRATION**
**MASTER: 50.00      CAL POINT: 2      MAX: 12**
**SET FLOW METER TO 50 CIM**
**PRESS YES TO CONTINUE**

16. Set the flow meter to 50 CIM (2<sup>nd</sup> line up from the bottom of the Flow Tube). Press YES to continue.

**FLOWMETER CALIBRATION**
**MASTER: 50.00      CAL POINT: 2      MAX: 12**
**VOLTS: X.XX**
**YES: ACCEPT VALUES      NO: REPEAT      QUIT: ABORT**

17. Prior to pressing YES, wait 10 seconds and record the voltage value in the CALIBRATION column of the ASCTD Flow Calibration Fill In Sheet for the second CAL POINT (50 CIM). Press YES to accept values.

18. Repeat steps 16 and 17 for the remaining calibration points. After pressing YES to accept values for the last calibration point (CAL POINT 12) the ASCTD will display the following screen:

**FLOWMETER CALIBRATION**
**CALIBRATION POINTS ARE READY!**
**PRESS YES TO CONTINUE**

19. Press YES.

**SYSTEM VENT UTILITY.** System vents and automatically proceeds to the next screen. This message flashes very quickly.

20. From **SENSOR CALIBRATION UTILITY** select **YES: SAVE.**

**SAVING CALIBRATION.** Calibration is saved. This message flashes very quickly.

## ASCTD User's & Set-up Manual

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### VERIFICATION OF CALIBRATION (FLOW)

**NOTE:** Close the FLOW METER needle valve.

21. From **CALIBRATION UTILITY** select option **[1-SENSOR CALIBRATION]**.

22. From **SENSOR CALIBRATION UTILITY** select option **[2-MONITOR]**.

23. From **SELECT SENSORS TO MONITOR** select option **[2-FLOW]**.

**FLOWMETER MONITOR:**  
**SECURELY INSTALL BLANKING PLATE WITH MASTER**  
**FLOWMETER. CLOSE NEEDLE VALVE.**  
**PRESS YES TO CONTINUE**

24. Press YES.

**FLOWMETER MONITOR**  
**FLOW (IN CIM) = 10V 900 CIM**

25. Allow **90 SECONDS FOR THE FLOW TO STABILIZE TO APPROXIMATELY ZERO.**

**FLOWMETER MONITOR:**  
**FLOW (CIM)= 0.00 V 0.00 CIM**

26. Record the voltage and flow values for CAL POINT 1 under the VERIFICATION OF CALIBRATION columns of the ASCTD FLOW CALIBRATION FILL IN SHEET. The CIM (cubic inches per minute) reading must be within +/- 15 CIM of zero.

27. The CIM reading for the remaining CAL POINTS must be within +/- 20 CIM of the corresponding setting on the FLOW METER. Dial the FLOW METER to the next CAL POINT (which would be 50 CIM). Let stabilize for 10 seconds and record the values for the second CAL POINT. Repeat these steps for the remaining CAL POINTS. After the last calibration point (CAL POINT 12) is recorded press NO to exit.

**SYSTEM VENT UTILITY.** System vents and automatically proceeds to the next screen. This message flashes very quickly.

28. From **SENSOR CALIBRATION UTILITY** select **NO: EXIT.**

29. From **CALIBRATION UTILITY** select **NO: EXIT.**

30. From **UTILITIES MENU** select **NO: EXIT.** ASCTD will go to **MAIN MENU.**

31. Disconnect the FLOWMETER, close the needle valve, and remove the hose assembly. Slowly remove the calibration test plate. Return equipment to Calibration Kit.

32. Fill out a new ASCTD calibration sticker (located in kit) and apply inside the lid cover.

33. Run a daily test to verify ASCTD operation.

**Revisions**

<b><u>Date:</u></b>	<b><u>Revision</u></b>		<b><u>Changes</u></b>
November 11, 1997	New	Jeff Reid	Original
October 21, 1999	A	John Joyce	Revised entire document, calibration procedures are now performed first followed by verification. Revised recording forms to reflect procedural changes.
April 27, 2000	B	John Joyce	Added Wabtec Corporation Logo
January 29, 2001	C	John Joyce	Revised document to reflect changes made in the ASCTD software revisions (GEN I Rev F and GEN II Rev C). ASCTD screen on regulator adjustment (pg. 4 item 16) now matches the calibration procedure. Screen on flow cal points (pg. 9 item 14) now matches the calibration procedure. Password entry levels were slightly changed-updated document to reflect this. Eliminated the number option for "Save and Exit" and "Exit," it is just YES or NO. Revised recording forms to reflect document revision.
March 19, 2001	D	John Joyce	Changed GEN I Rev F to Rev F.1.0 and GEN II Rev C to Rev C.1.0. Revised recording forms to reflect document revision.
April 5, 2002	E	Robert Carr	Flow calibration procedure includes fixed points. Wabco flying W removed from pic.IN^3 changed to CIM.
July 15, 2004	F	Robert Carr	Removed software revision reference.



## ASCTD User's & Set-up Manual

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### Battery Replacement Guide

#### Disclaimer:

Wabtec Corporation is not responsible for damage during the replacement of the batteries for the ASCTD. There is always risk involved when servicing electrical components that damage may occur. If the Battery Container is damaged, the customer will have to purchase a new replacement from the Wabtec Service Center.

If you do not feel comfortable in performing this task, please call a Wabtec Corporation Field Service Representative for assistance.

#### WARNING:

Batteries contain Lead Acid. Make sure you dispose of the batteries properly.

#### Identification:

This procedure is to replace new style ASCTD batteries only. The old type battery has smaller terminals and will not allow the new type to be installed. If you have an older type battery, please refer to page 73 of this document in order to change out the wire ends. The older type battery was made by Panasonic and can be identified by having 4 cells instead of 2. See pictures below:



“OLD Type”



“NEW Type”

#### Parts and Tools Required:

Power Sonic Battery #PS-12120 (Quantity of 2)

- Allied Electronics - Part# 621-1212 - Phone# 1-800-433-5700
- Philips Screwdriver (#2 end)

**Battery Replacement Procedure:**

1. If the ASCTD is ON, turn it OFF; If AC is plugged in, unplug it.
2. Open and remove the ASCTD door and toggle the battery switch to the OFF position.
3. Disconnect the battery cable and remove the battery container from the tester.
4. Place the battery container on a clean work surface and unscrew the 10 screws which fasten the lid to the battery container (Figure 1).
5. Lift the lid straight up by pulling up on the box connector (Figure 2).
6. Remove the 4 pin connector (red/white/black/green wires) from the battery charger module by squeezing the tab underneath the connector and pulling straight out (Figures 3 and 4).
7. Remove the lid and place off to the side.
8. Pull off the quick disconnect connectors on the battery tabs (blue and Black wires – Figure 5).
9. Remove the jumper wire that connects the 2 batteries (Figure 6).
10. Tip the battery container vertically on the handle end and remove the batteries (Figure 7).

 **WARNING:** Make sure the batteries are to be disposed of properly.

11. Install the new batteries (remove safety tabs) and follow the procedure in reverse order.
12. After the battery container has been installed and the door is on, turn on the tester.
13. Observe that the tester turns on when AC is not plugged in. The battery indicate should show green.

**NOTE:** It is possible that the batteries were not charged when shipped, but usually this is not the case.

14. If the unit powers up and the battery indicator is green, then you have completed this procedure.
15. If the unit does not power up or if the battery indicator is low, plug AC into the unit. Try to turn on the unit.
16. If the unit does not power up, but the battery charger light is illuminated, wait for the battery to charge. If after 10 hours, the unit will still not turn on without AC, call a Wabtec Corporation Field Service Representative.
17. If the unit does power up with AC plugged in, leave it for 10 hours and then check that the battery stays in the green when unplugging it. If it does not, call a Wabtec Corporation Field Service Representative.
18. End of procedure

## ASCTD User's & Set-up Manual

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Figure 1



Figure 2

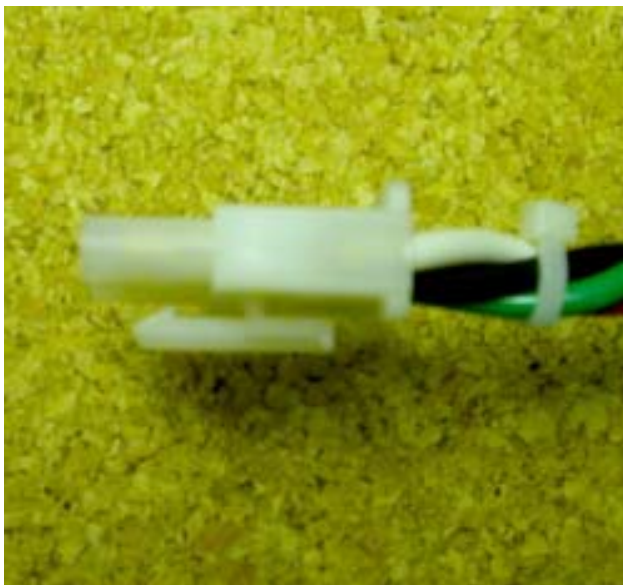


Figure 3

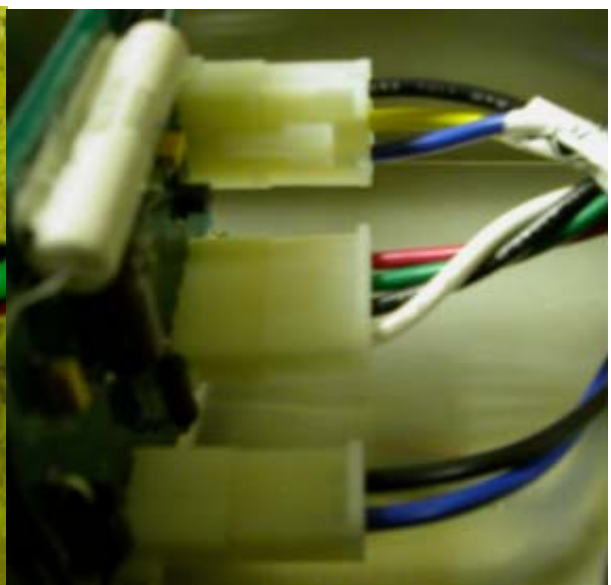
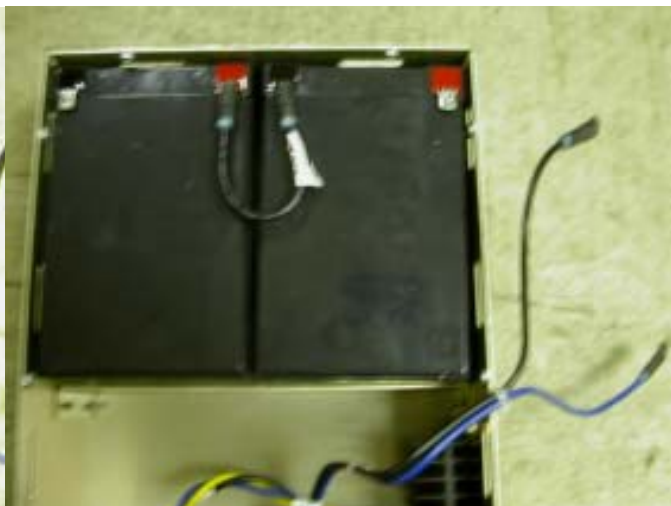


Figure 4



**Figure 5**



**Figure 6**



**Figure 7**

## ***ASCTD User's & Set-up Manual***

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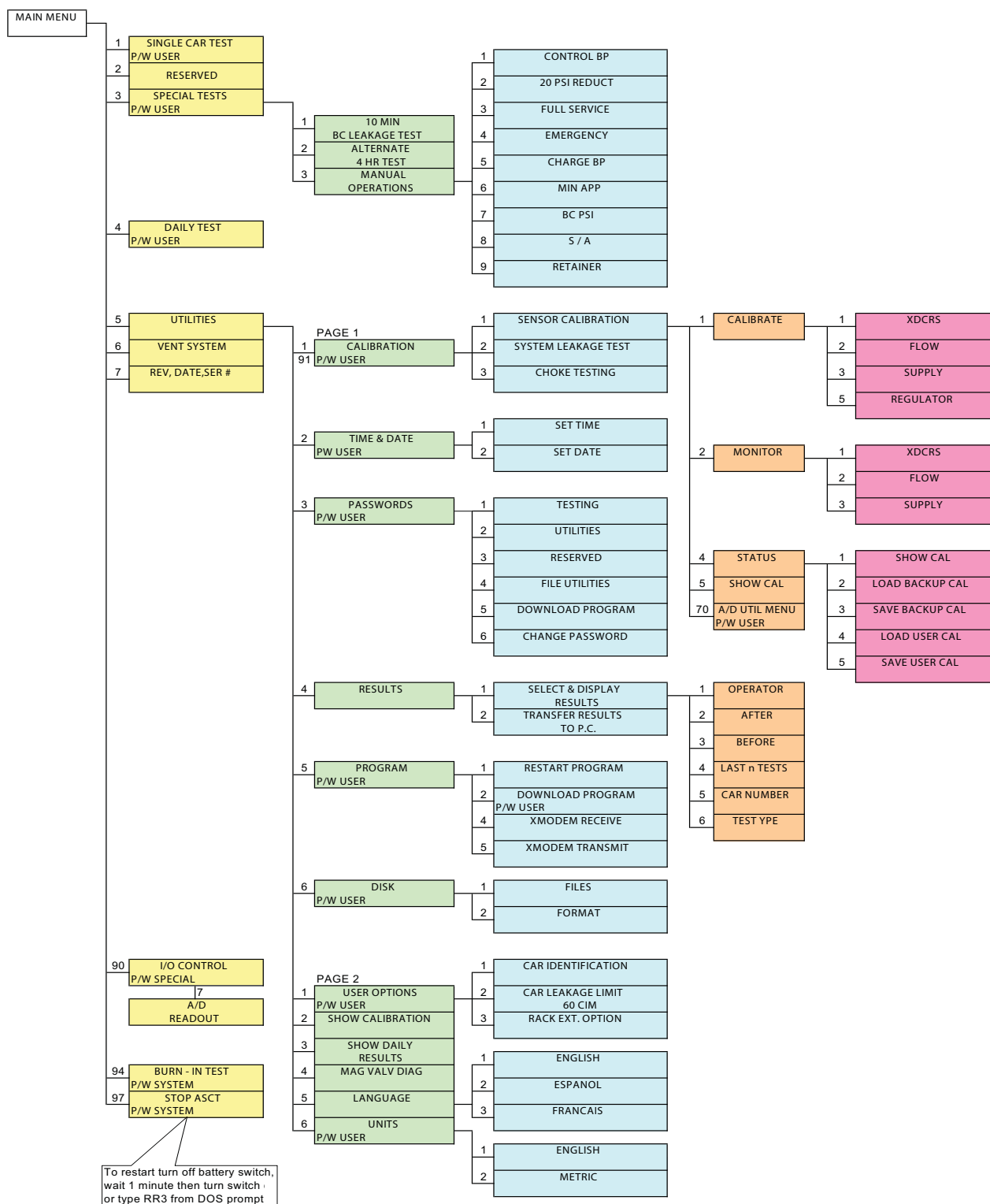
### **Changing out the Battery Wire Ends:**

The following are required:

- Crimp tool for Blue sleeve (Radio Shack #64-404 or equivalent)
- Wire Cutters (Radio Shack #64-404 or equivalent)
- Wire stripper for 16AWG wire (Radio Shack #64-404 or equivalent)
- ¼" insulated quick disconnect connectors (1/2 Radio shack #34-3133 or equivalent)

#### **Procedure:**

1. Remove the battery cable and cut the Blue and Black wires as close to the crimp sleeve ends as possible; strip insulation off wire end.
2. Remove the jumper cable and cut off the old crimp connectors, again as close to the sleeve as possible; strip insulation off wire end.
3. Open the crimp package and discard the Male crimp ends (where applicable).
4. Crimp the new insulated female ¼" quick disconnect connectors onto the stripped wire end.



**WABCO Freight Car Products**  
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